(Slip Opinion)

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BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re: City of Lowell NPDES Permit No. MA0100633	)	NPDES Appeal No. 19-03

Decided June 29, 2020

ORDER DENYING REVIEW

Before Environmental Appeals Judges Aaron P. Avila, Mary Kay Lynch, and Kathie A. Stein.

IN RE CITY OF LOWELL

NPDES Appeal No. 19-03

ORDER DENYING REVIEW

Decided June 29, 2020

Syllabus

The City of Lowell, Massachusetts ("City") petitioned the Environmental Appeals Board ("Board") to review a National Pollutant Discharge Elimination System ("NPDES") permit that the United States Environmental Protection Agency Region 1 ("Region") issued to the City pursuant to the Clean Water Act. The permit authorizes the City to discharge wastewater effluent from its regional wastewater treatment facility and several combined sewer overflow outfalls into the Merrimack River and two nearby tributaries. The permit on which the City seeks review is a renewal of a permit issued in 2005.

The City challenges several of the permit's provisions, including: phosphorus, wastewater flow, and escherichia coli effluent limitations; monitoring and reporting requirements for whole effluent toxicity and metals; and prohibitions on the bypass of wastewater treatment and against violating Massachusetts water quality standards. In addition, the City objects that the permit fails to include a schedule for submission as well as implementation of a long-term control plan for combined sewer overflows.

Held: The City has not demonstrated that review is warranted on any of the grounds presented. As such, the Board denies the petition for review in all respects.

(1) *Phosphorus Effluent Limit*. The City failed to satisfy the threshold requirements for review under 40 C.F.R. § 124.19(a)(4) as to its argument that the Region did not comply with 40 C.F.R. § 122.44(d)(1)(vi) in establishing the phosphorus limit because the City did not show that this issue had been raised in the public comment period on the draft permit. Despite its allegations to the contrary, the City did not show that the Region treated a federal water quality criterion recommendation for phosphorus as a binding rule in establishing the phosphorus limit. Finally, the City failed to demonstrate that the Region, in setting the phosphorus limit, clearly erred by using a steady-state model for projecting phosphorus concentrations in the Merrimack River instead of waiting for the City to complete a different type of model, relying on data on the low flow levels in the River in projecting phosphorus concentrations, or in proceeding to establish the phosphorus limit despite the lack of a total maximum daily load for the River.

(2) *Wastewater Flow Effluent Limit*. The City failed to satisfy the threshold requirements for review under 40 C.F.R. § 124.19(a)(4) as to its argument that the Region lacked authority to set a limit on flow because the City did not address the Region's response to comments on this issue. In the response to comments, the Region explained that it is authorized to limit flow under its statutory and regulatory authority to prescribe permit conditions that assure compliance with the technology- and water quality-based effluent limitations in the permit. The City does not explain why the Region's legal analysis was clearly erroneous. Additionally, the City failed to demonstrate that the flow limit was unnecessary to protect public health or the environment or inconsistent with EPA policy on management of combined sewer overflows.

(3) Escherichia Coli *("*E. Coli*") Daily Effluent Limit*. The City failed to satisfy the threshold requirements for review under 40 C.F.R. § 124.19(a)(4) for most of its challenges on the *E. coli* daily effluent limit because the City did not address the Region's response to comments rejecting these challenges. Additionally, the City failed to satisfy the threshold requirement for review under 40 C.F.R. § 124.19(a)(4) as to its claim that the Region did not comply with 40 C.F.R. § 122.45(d) because this claim was not specifically raised in public comments on the *E. coli* effluent limit.

(4) *Long-term Control Plan*. The City's challenge to the lack of a permit provision requiring development and submission of a long-term control plan is moot given that the City has now developed and submitted such a plan. The City's challenge to the lack of a permit provision addressing implementation of a long-term control plan failed to satisfy the threshold requirement for review under 40 C.F.R. § 124.19(a)(4) because it was not raised during the public comment period.

(5) *Prohibition on Bypass of Treatment*. The City failed to demonstrate that the Region clearly erred by including a prohibition on bypass of treatment in the permit that tracks the regulatory bar on bypass. The City did not show that it has made the showing necessary for a bypass allowance or that its arguments based on other permits for other wastewater treatment facilities are relevant to the terms of its permit.

(6) *Prohibition Against Violating Water Quality Standards*. The City failed to demonstrate that the Region clearly erred in including in the permit a prohibition against the City violating Massachusetts water quality standards. The City's argument that the Region lacked authority to impose this requirement fails because its arguments under Clean Water Act section 301 are vague and unsubstantiated. The City incorrectly asserts that the prohibition against violating such standards is unnecessary and fails to substantiate its claim that such prohibition deprives the City of the Clean Water Act permit shield, fair notice, or due process. Finally, the City failed to satisfy the threshold requirements for review under 40 C.F.R. § 124.19(a)(4) as to its argument that the Region did not follow EPA policy on combined sewer overflows because the City does not explain, in its petition, how the Region erred in responding to its comment on this issue.

(7) *Monitoring and Testing*. The City failed to demonstrate that the Region clearly erred in requiring that the City monitor whole effluent toxicity and metals on a quarterly basis. The City did not explain why the Massachusetts policy on which such monitoring was based should not be followed and its challenge to the data relied on by the Region was insufficient to overcome the deference the Board accords the Region on such technical matters. Additionally, the City failed to demonstrate that the Region clearly erred in requiring that the City develop a monitoring plan in which samples are taken at the same location, same time and days of the week each month. The Region routinely requires such sampling plans in permits to assure that permittees sample in a representative manner and the City did not substantiate its claim that the sampling requirements would bias monitoring results.

Before Environmental Appeals Judges Aaron P. Avila, Mary Kay Lynch, and Kathie A. Stein.

Opinion of the Board by Judge Stein

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I. *STATEMENT OF THE CASE*

The City of Lowell, Massachusetts has petitioned for review of a National Pollutant Discharge Elimination System ("NPDES") permit that Region 1 of the United States Environmental Protection Agency issued to the City pursuant to the Clean Water Act.[1] The permit authorizes the City to discharge wastewater effluent from its regional wastewater treatment facility and several combined sewer

[1] The Region issued the permit jointly with the Massachusetts Department of Environmental Protection. In issuing the permit, the Department acted pursuant to the Massachusetts Clean Water Act. Region 1, U.S. EPA & Mass. Dep't of Envtl. Prot., *Lowell Reg'l Wastewater Utility, NPDES Permit No. MA0100633* (Sept. 25, 2019) (A.R. A.1).

overflow outfalls into the Merrimack River and two nearby tributaries. The permit on which the City seeks review is a renewal of a permit issued in 2005.

The City challenges the permit's phosphorus, wastewater flow, and *Escherichia coli* effluent limitations; monitoring and reporting requirements for whole effluent toxicity and metals; and prohibitions on the bypass of wastewater treatment and against violating Massachusetts water quality standards. In addition, the City objects that the permit fails to include a schedule for submission as well as implementation of a long-term control plan for combined sewer overflows. The City's challenges are denied because they either have not been preserved for Board review or the City fails to carry its burden to demonstrate any clear error by the Region.

II. *LEGAL FRAMEWORK*

A. *The Clean Water Act*

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Clean Water Act ("CWA") § 101(a), 33 U.S.C. § 1251(a). A number of Clean Water Act provisions are relevant to this appeal and are discussed below.

1. *Water Quality Standards*

Water quality standards are intended "to protect the public health or welfare, enhance the quality of water and serve the purposes of the [Clean Water Act]." CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A). These standards "serve the dual purposes of establishing the water quality goals for a specific water body and * * * the regulatory basis for the establishment of water-quality-based treatment controls and strategies," 40 C.F.R. § 131.2, including effluent limits and total maximum daily pollution loads for water bodies. *See* CWA §§ 301(b)(1)(C), 303(d)(1)(C), 33 U.S.C. §§ 1311(b)(1)(C), 1313(d)(1)(C); 40 C.F.R. § 122.44(d).

Water quality standards are promulgated by states and approved by EPA. *See* CWA § 303(a), 33 U.S.C. § 1313(a). The Clean Water Act requires that water quality standards include: (1) "designated uses" of a water body, such as public drinking supply, recreation, or wildlife habitat; (2) "water quality criteria," expressed in numeric or narrative form, that protect the designated uses of water bodies; and (3) an "antidegradation" provision that protects existing uses and high quality waters. *See* CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. §§ 131.10-.12. In establishing these standards, a state must take into consideration the "use and value [of standards] for public water supplies, propagation of fish and

wildlife, recreational purposes, and agricultural, industrial, and other purposes." CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); *see* 40 C.F.R. § 131.2.

2. *National Pollution Discharge Elimination System Permits*

To help achieve the Clean Water Act's objectives, the Act prohibits the discharge of pollutants into the waters of the United States, unless authorized by an NPDES permit or other specified Clean Water Act provision. *See* CWA §§ 301(a), 402, 33 U.S.C. §§ 1311(a), 1342. An NPDES permit must include EPA-established technology-based effluent limitations (limits that reflect the pollution reduction achievable through pollution control measures) as well as limitations "necessary to meet [state] water quality standards." CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C); *see* CWA §§ 301(b), 401(a)(1)-(2), 33 U.S.C. §§ 1311(b), 1341(a)(1)-(2). Water quality-based effluent limits are designed to ensure that pollutant discharges will meet state water quality standards applicable to the receiving water.

Accordingly, all NPDES permits must contain: (1) technology-based effluent limitations (or limits) that reflect the pollution reduction achievable based on several levels of pollution control or process changes, without reference to the effect on the receiving water; and (2) any more-stringent limits representing the level of control necessary to ensure that the receiving waters attain and maintain state water quality standards. CWA §§ 301(b), 303(c), 33 U.S.C. §§ 1311(b), 1313(c). An effluent limitation is defined by the Act as "any restriction * * * on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters." CWA § 502(11), 33 U.S.C. § 1362(11). The effluent limits at issue in this case are water-quality based.

Because Clean Water Act section 301 mandates that NPDES permits include limitations necessary to meet state water quality standards, federal regulations implementing the NPDES program expressly state that NPDES permits "must control all pollutants * * * [that] will cause, have the reasonable potential to cause, or contribute to" an exceedance of "any State water quality standard, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). The process for determining whether water quality-based effluent limits are required under this regulatory provision is commonly referred to as a "reasonable potential analysis." *See* Office of Water, U.S. EPA, EPA-833-K-10-001, *Permit Writers' Manual* § 6.3.1, at 6-23 (Sept. 2010) ("Permit Writers' Manual").

If a reasonable potential analysis shows a potential for a permittee's discharge to cause an exceedance of a narrative water quality criterion, there are

three methods specified in NPDES regulations that the permitting issuer may follow in establishing an effluent limit that adheres to the criterion: (1) "us[e] a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use;" (2) rely on Clean Water Act section 304(a) recommended water quality criteria, "on a case-by-case basis," supplemented as necessary by other relevant information; or (3) use an "indicator parameter for the pollutant of concern." 40 C.F.R. § 122.44(d)(1)(vi).

3. *Requirements Applying to Combined Sewer Overflows*

To expedite compliance by combined sewer systems with the Clean Water Act, EPA issued in 1994 a Combined Sewer Overflow Control Policy ("CSO Policy").[2] Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688 (Apr. 19, 1994). The CSO Policy is intended to provide guidance to permittees with combined sewer systems, NPDES permitting authorities, state water quality standards authorities, and enforcement authorities. *Id*. at 18,689. The Policy explains that combined sewer overflows ("CSOs") are point sources subject to NPDES permit requirements, including both technology-based and water quality-based requirements of the Clean Water Act. *Id*. The major requirements of the Policy are that permittees: (1) undertake characterization of their combined sewer systems and CSO discharges; (2) "demonstrate implementation of minimum technology-based controls identified in the Policy," and (3) develop and implement long-term control plans that ensure that the combined sewer systems comply with the Clean Water Act, including water quality standards. *Id*. at 18,688.

The CSO Policy lists nine minimum technology-based controls, including, among other things, proper operation and maintenance, maximizing storage in the collection system, maximizing flow to the wastewater treatment facility, prohibiting CSOs during dry weather, and public notification of CSO occurrences. *Id*. at 18,691. As to the long-term control plan for attaining compliance with the Clean Water Act, the Policy states that the plan "should consider the site-specific nature of CSOs and evaluate the cost effectiveness of a range of control options/strategies." *Id*. The section of the Policy that addresses "Implementation Responsibilities" explains that the NPDES authorities (i.e., authorized states or

[2] A combined sewer system is a wastewater collection system that "conveys sanitary wastewaters (domestic, commercial[,] and industrial wastewaters) and storm water through a single-pipe system to a Publicly Owned Treatment Works." CSO Policy, 59 Fed. Reg. at 18,689. A combined sewer overflow "is a discharge from a [combined sewer system] at a point prior to" the treatment facility. *Id*.; *see* Part III.A., below.

EPA regional offices) should "determine the appropriate vehicle (i.e., permit reissuance, information request under [Clean Water Act] section 308 or State equivalent[,] or enforcement action) to ensure that compliance with the [Clean Water Act] is achieved as soon as practicable." *Id*. at 18,690.

Congress incorporated the CSO Policy into the Clean Water Act, at section 402(q), on December 15, 2000, as part of the Wet Weather Water Quality Act of 2000, Pub. L. No. 106-554, 114 Stat. 2763 (codified at 33 U.S.C. § 1342(q)). Specifically, section 402(q) provides that "[e]ach permit, order, or decree issued pursuant to this chapter after December 21, 2000 for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy * * *." CWA § 402(q)(1), 33 U.S.C. § 1342(q)(1). Subsequently, Congress added section 402(s) to the Clean Water Act, which gives municipalities the opportunity to develop an "integrated plan" that addresses, among other things, CSOs, municipal stormwater and wastewater discharges, and water quality-based effluent limitations implementing wasteload allocations in a total maximum daily load established for a water body by a state. CWA § 402(s), 33 U.S.C. § 1342(s); *see* Water Infrastructure and Improvement Act, Pub. L. No. 115-436, 132 Stat. 5558 (2019). Integrated plans may be incorporated into NPDES permits. CWA § 402(s)(2), 33 U.S.C. § 1342(s)(2).

4. *State Certification of Proposed NPDES Permits*

To ensure that any needed water quality-based effluent limits are incorporated in permits, section 401(a)(1) bars EPA from issuing a permit until the state in which the facility is located either certifies that the permit complies with the state's water quality standards or waives certification. CWA § 401(a)(1)-(2), 33 U.S.C. § 1341(a)(1)-(2). Section 401 specifies that the certification "shall set forth any effluent limitations and other limitations * * * necessary to assure" compliance with state water quality standards, and such a limitation "shall become a condition on any Federal license or permit." CWA § 401(d), 33 U.S.C. § 1341(d).

B. *Massachusetts' Water Quality Standards*

Massachusetts has established water quality standards, including designations of use and water quality criteria, for the waters relevant to this case. The Merrimack River immediately downstream from the Lowell treatment facility has been designated as a Class B Warm Water Fishery, meaning that it is designated as habitat for fish, other aquatic life, and wildlife, and for primary (e.g., swimming) and secondary (e.g., fishing and boating) contact recreation. *See* 314 Mass. Code Regs. §§ 4.05(3)(b), 4.06 tbl.20.

Relevant Massachusetts water quality criteria include criteria for bacteria and nutrients. The bacteria criterion for Class B waters is numeric and is written in terms of the concentration of *Escherichia coli* ("*E. coli*") bacteria. It provides that "the geometric mean of all E. coli samples taken within the most recent six months shall not exceed 126 colonies per 100 [milliliters] typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 [milliliters]." *Id*. § 4.05(3)(b)(4)(b). The nutrients criterion applies to all Massachusetts surface waters and is a narrative criterion that provides that "[u]nless naturally occurring, all surface water shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses * * *." *Id*. § 4.05(5)(c).

Massachusetts water quality standard regulations also specify the most severe hydrological conditions—i.e., the lowest flow conditions—under which water quality criteria must be met. For rivers and streams, Massachusetts requires that "the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years." *Id*. § 4.03(3)(a).

III. *FACTUAL HISTORY*

A. *The City of Lowell's Wastewater Treatment Facility and Combined Sewer Outfalls*

The Lowell Regional Wastewater Utility operates a regional treatment facility located near the eastern boundary of the City of Lowell, Massachusetts, on the Merrimack River. Region 1, U.S. EPA, *Fact Sheet, NPDES Permit No. MA0100633* § 3.1, at 11 (June 7, 2019) (A.R. A.15) ("Fact Sheet"). The Lowell treatment facility receives wastewater from the City of Lowell, as well as the Towns of Tewksbury, Dracut, Tyngsboro, and Chelmsford.[3] This wastewater is comprised of domestic wastewater, industrial wastewater, septage, and stormwater. *Id*. § 3.1, at 12.

Wastewater is collected and conveyed to the Lowell treatment facility in two different manners. The City of Lowell uses both combined and separated sewer collection systems. The other municipalities collect their wastewater only in separated sewer systems. A combined system collects all wastewater in a single set of pipes for conveyance to a treatment facility. A separated system uses one set

[3] These towns are co-permittees on the portions of the permit addressing unauthorized discharges (Part B), operation and maintenance of the sewer system (Part C), and alternate power sources (Part D). Fact Sheet § 3.1, at 12.

of pipes for domestic and industrial wastewater and septage for conveyance to a treatment facility and a separate set of pipes for stormwater, which typically is not conveyed to a treatment facility. The separated collection systems in the Towns of Tewksbury, Dracut, Tyngsboro, and Chelmsford convey domestic and industrial wastewater and septage to the Lowell treatment facility, whereas stormwater is discharged directly into local water bodies. Because a portion of the City of Lowell's collection system is combined, some stormwater is sent to the Lowell treatment facility during wet weather events, while stormwater from the separated systems is not. Fact Sheet § 3.1.2, at 12.

The Lowell treatment facility provides both primary and secondary treatment of wastewater. Primary treatment involves mechanical screening of the wastewater flow as well as removal of sludge from primary settling tanks. In the secondary treatment phase, the wastewater is aerated, which creates activated sludge. After removal of the activated sludge, the remaining water flow is disinfected and dechlorinated before being discharged into the Merrimack River. *Id*. § 3.1.1, at 12. As designed, the Lowell treatment facility has the capacity to provide primary and secondary treatment of 32 million gallons per day. *Id*. § 3.1, at 11-12. The facility's average discharge flow over the last five years has been 25 million gallons per day; however, within the last five years there have been two violations of the annual average flow limitation. *Id*. § 3.1, at 11, § 5.1.1, at 16; City of Lowell, Mass., Petition for Review 16 (Oct. 24, 2019) ("Pet.").

In addition to the discharge to the Merrimack River from the Lowell treatment facility outfall, the Lowell Regional Wastewater Utility discharges a mixture of stormwater and wastewater from nine combined sewer overflow outfalls. Seven of these outfalls discharge to the Merrimack River. The other two outfalls discharge to either Beaver Brook or the Concord River, both of which are tributaries to the Merrimack River. Fact Sheet § 4, at 13. Information provided by the City to the Region and Massachusetts Department of Environmental Protection ("Massachusetts DEP") in 2014 indicates that the City's combined sewer outfalls "discharge[] 171 million gallons with up to twenty CSO activations during a typical year to Beaver Brook, the Concord River, and the Merrimack River." Letter from Rachel Freed, Deputy Reg'l Dir., Bureau of Water Resources, Mass. Dep't of Envtl. Prot., to Mark Young, Exec. Dir., Lowell Reg'l Wastewater Util. 1 (Dec. 16, 2016) (A.R. H.6) ("MassDEP LTCP Comments Letter").

B. *The Condition of the Receiving Waters*

Pursuant to section 303(d) of the Clean Water Act, states are required to identify and list waters where the technology-based effluent limitations and other

pollution controls under the Act are not stringent enough to achieve applicable water quality standards. CWA § 303(d), 33 U.S.C. § 1313(d); *see* 40 C.F.R. § 130.7(b)(1). The identified waters are commonly referred to as "impaired" waters. *See* Permit Writers' Manual § 6.2.1.2, at 6-13. In making such impairment determinations, Massachusetts has divided its waters into discrete segments. The ten outfalls managed by the Lowell Regional Wastewater Utility (the one outfall for the treatment facility and the nine combined sewer overflow outfalls) discharge into three different segments of the Merrimack River and one segment each of Beaver Brook and the Concord River. Fact Sheet § 4, at 13. Massachusetts has determined that all of these segments are classified as impaired for, among other things, either *E. coli* or fecal coliform and three of the five segments are classified as impaired for phosphorus,[4] including the Merrimack River segment immediately downstream from the Lowell treatment facility outfall. *Id*. § 4, at 14 tbl.1; *see* Commonwealth of Mass., Mass. Year 2014 Integrated List of Waters 158, 173, 175 (Dec. 2015) (A.R. I.1).

C. *The Challenged Permit*

The NPDES permit challenged in the current proceeding replaces a permit issued by the Region in 2005 ("2005 permit"). *See* Region 1, U.S. EPA & Mass. Dep't of Envtl. Prot., *Lowell Reg'l Wastewater Util., NPDES Permit No. MA0100633* (Sept. 1, 2005) (A.R. A.21) ("2005 Permit"). That permit expired in 2010 but has been administratively extended by the City of Lowell's application for its renewal. Fact Sheet § 1, at 4.

In June 2019, the Region released for public comment a new draft permit to replace the 2005 permit. Region 1, U.S. EPA & Mass. Dep't of Envtl. Prot., *Joint Public Notice of the Draft Permit MA0100633* (June 7, 2019) (A.R. 7); *see* Region 1, U.S. EPA & Mass. Dep't of Envtl. Prot., *Lowell Reg'l Wastewater Util., NPDES Permit No. MA0100633* (undated) (A.R. A.14) ("Draft Permit"). The comment period ran from June 7, 2019, until July 23, 2019. Region 1, U.S. EPA, *Response to Comments: NPDES Permit No. MA0100633*, at 1 (undated) (A.R. B.1) ("RTC"). On September 24, 2019, the Massachusetts DEP certified under Clean Water Act

[4] Impairment determinations and effluent limits for phosphorus are commonly written in terms of Total Phosphorus, which includes elemental phosphorus as well as the phosphorus in phosphates. *See* Office of Water, U.S. EPA, Doc. No. EPA 440/5-86-001, *Quality Criteria for Water 1986*, at 241-42, 246 (May 1, 1986), https://www.epa.gov/sites/production/files/2018-10/documents/quality-criteria-water-1986.pdf. For convenience, in this opinion we use the term phosphorus.

section 401 that "the conditions of the permit will achieve compliance" with applicable sections of the Clean Water Act and the Massachusetts Clean Water Act, including regulations issued under Massachusetts law. Letter from Lealdon Langley, Dir., Div. of Watershed Mgmt., Mass. Dep't of Envtl. Prot., to Thelma Murphy, Water Permit Branch Chief, Region 1, U.S. EPA 1 (Sept. 24, 2019) (A.R. D.1). Finally, after modifying the permit in response to public comments and preparing a response to those comments, Region 1 and Massachusetts DEP jointly issued a renewed permit on September 25, 2019 ("2019 permit"). Region 1, U.S. EPA & Mass. Dep't of Envtl. Prot., *Lowell Reg'l Wastewater Util., NPDES Permit No. MA0100633* (Sept. 25, 2019) (A.R. A.1) ("2019 Permit"). That permit was issued by the Region under the federal Clean Water Act and Massachusetts DEP under the Massachusetts Clean Water Act.[5] *Id*. at 1.

The City of Lowell ("City") has challenged several provisions in the 2019 permit, and those provisions and other relevant provisions are described below.

1. *Phosphorus Effluent Limit*

In a change from the 2005 permit, the Region added a phosphorus effluent limit to the 2019 permit. The phosphorus effluent limit was included to ensure that discharges from the Lowell treatment facility comply with Massachusetts' narrative water quality criterion for nutrients. *See* Fact Sheet § 5.1.10.2, at 23. The nutrients criterion provides that "all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses" and shall not exceed any Total Maximum Daily Load ("TMDL") level established by Massachusetts DEP.[6] 314 Mass. Code Regs. § 4.05(5)(c). Excessive levels of phosphorus can overstimulate algae growth, harming water quality and interfering with designated uses by causing an unpleasant appearance and odor, degrading water clarity, reducing the quality and availability of suitable

[5] The Fact Sheet and Response to Comments explained that joint issuance meant the permit was both a federal NPDES permit and "a discharge permit issued by the Director of the Division of Watershed Management pursuant to [Massachusetts General Laws] Chap. 21, § 43," Fact Sheet § 1, at 4, and that the permit is "separately enforceable" under federal and state law. RTC at 1.

[6] Once a water is identified as impaired under CWA § 303(d), the state begins a planning process to bring those waters into compliance with water quality standards. This process includes setting priorities for establishing TMDLs for individual pollutants in the impaired waters. CWA § 303(d)(1)(C)-(D), 33 U.S.C. § 1313(d)(1)(C)-(D).

habitat for aquatic life, and producing toxic cyanobacteria. Fact Sheet § 5.1.10.2, at 23.

As noted, the Merrimack River segment to which the Lowell treatment facility discharges has been designated for use as "a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation," and is currently consider impaired for phosphorus. 314 Mass. Code Regs. §§ 4.05(3)(b), 4.06 tbl.20. No TMDLs have been established by Massachusetts DEP for this segment of the Merrimack River.

In the draft permit, the Region proposed a one-year time frame for the City to come into compliance with the phosphorus effluent limit. Draft Permit pt. I.H.1. In its comments on the draft permit, the City maintained that a longer compliance period was needed because the City was in the process of upgrading its facility. Letter from Mark A. Young, Exec. Dir., Lowell Wastewater Util., to Meridith Finegan, U.S. EPA Region 1 attach. at 12-13 (July 22, 2019) (A.R. C.12) (attaching City of Lowell Comments on Draft NPDES Permit No. MA0100633) ("Lowell Comments"). After reviewing the comment, the Region agreed that the proposed compliance period was inadequate "based on recent levels of total phosphorus which consistently exceed the newly established permit limit and the potential need for capital investment in the treatment plant." RTC at 42-43. Accordingly, the Region increased the length of the compliance schedule in the final permit to fifty-four months. *Id*. at 43. The compliance schedule gives the City two years to complete planning and design of needed facility improvements and an additional thirty months to construct those improvements. *Id*.

2. *Wastewater Flow Effluent Limit*

The 2019 permit includes, as did the 2005 permit, an effluent limit on wastewater flow of 32 million gallons per day, calculated on a rolling annual average. 2019 Permit pt. I.A.1; Fact Sheet at 16. In addition, the 2019 permit requires that the average monthly and maximum daily flow for each month be reported. 2019 Permit pt. I.A.1 n.5; Fact Sheet at 16.

3. E. Coli *Daily Effluent Limit*

To address the discharge of bacteria, the 2019 permit includes effluent limits on *E. coli*. In the 2005 permit, restrictions on the discharge of bacteria were written in terms of effluent limits on fecal coliform bacteria. Fact Sheet at 18. These fecal coliform bacteria effluent limits were based on then-existing Massachusetts water quality criteria. In 2007, however, Massachusetts amended

its water quality criteria for bacteria. *See* 314 Mass. Code Regs. § 4.05(3)(b)(4)(b); Fact Sheet at 19. Based on the amended water quality criteria, as interpreted in Massachusetts DEP guidance,[7] the Region included monthly average and daily maximum *E. coli* effluent limits of 126 colony forming units ("cfu") of *E. coli* per 100 milliliters ("mL") and 409 cfu per 100 mL, respectively. 2019 Permit pt. I.A.1.

4. *Bypass Prohibition*

There is a regulatory prohibition against the "bypass" of a wastewater treatment facility's treatment apparatus and process unless certain conditions are met. 40 C.F.R. § 122.41(m)(4). Bypass is defined as "the intentional diversion of waste streams from any portion of a treatment facility." *Id*. § 122.41(m)(1)(i). Bypass is lawful only if the facility operator shows that bypass "was unavoidable to prevent loss of life, personal injury, or severe property damage"; "[t]here were no feasible alternatives to the bypass"; and "[t]he permittee submitted [required] notices." *Id*. § 122.41(m)(4)(i). For an "anticipated bypass," notice is required at least ten days prior to the bypass, if possible; for an "unanticipated bypass," notice is required within twenty-four hours of the bypass." *Id*. § 122.41(m)(3)(i)-(ii). The 2019 permit includes language that mirrors this regulation. *See* 2019 Permit pt. II.B.4.

5. *Prohibition Against Violating Water Quality Standards*

The 2019 permit contains two statements regarding compliance with Massachusetts water quality standards. First, the permit specifies that discharges from the Lowell treatment facility "shall not cause a violation of the water quality standards of the receiving water." 2019 Permit pt. I.A.2. Second, the permit states that "effluent discharged from [the Lowell treatment facility's] CSOs * * * shall not cause or contribute to violations of federal or state Water Quality Standards." *Id*. pt. I.F.2.b. Similar language was contained in the 2005 permit. 2005 Permit pts. I.A.1.a., I.F.1.a.ii.

6. *Provision on Combined Sewer Overflows*

The 2019 permit includes several provisions that address CSOs, including limits on effluent discharges; implementation requirements for the nine minimum technology-based controls, including a public notification plan; reporting

[7] See Mass. Dep't of Envt'l Protection, *Guidance on Implementation of Proposed Primary Contact Recreation Bacteria Criteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00*, at 7, 11-12 (draft June 25, 2007).

requirements on compliance with the nine minimum controls; and monitoring for the CSO outfalls. *Id*. pt. 1.F.3.

7. *Whole Effluent Toxicity and Metals Testing Frequency Requirements*

Whole effluent toxicity ("WET") testing is used "to ensure that the additivity, antagonism, synergism and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent." Fact Sheet § 5.1.12, at 29. The 2005 permit did not establish WET effluent limits but did require WET quarterly monitoring and reporting. 2005 Permit § I.A.1. Monitoring of metals was included as part of these WET testing requirements. *Id*. This approach as to WET and metals monitoring was continued in the 2019 permit.

8. *Requirements to Sample on Specified Times and Days*

As to all effluent monitoring and sampling, the 2019 permit states that "[a] routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month." 2019 Permit pt. I.A.1 n.1. The permit allows "[o]ccasional deviations" from the sampling program so long as "the reason for the deviation" is appropriately documented. *Id*. Additionally, as to WET monitoring only, the permit specifies that "[t]oxicity test samples shall be collected, and tests completed, during the same weeks in January, April, July and October." *Id*. pt. I.A.1 n.13.

D. *The Status of the City's Long-Term Control Plan*

Over the last ten years, the Region has issued two administrative orders to compel the City to develop and submit an adequate long-term control plan for CSOs. The first of these orders was issued in 2010 after the Region found that the City violated its 2005 permit by (1) exceeding the permit's effluent limit on the quantity of wastewater flow allowed from the Lowell treatment facility, and (2) discharging fecal coliform bacteria from its CSO outfalls, which caused or contributed to violations of Massachusetts water quality standards. Region 1, U.S. EPA, *Findings of Violation and Order for Compliance, Docket No. 010-026*, at 2-3 (Sept. 30, 2010) (A.R. H.22). That order required, among other things, that the City submit a schedule for completion of a long-term control plan, and that upon the Region's approval of the schedule, the schedule would become "an enforceable requirement" of the order. *Id*. at 5. Additionally, the order required that the City submit a scope of work for completion of the long-term control plan that conformed to the CSO Policy. *Id*.

Pursuant to the 2010 administrative order, the City in August 2014 submitted a long-term control plan to the Region and Massachusetts DEP. *See* Letter from Mark A. Young, Exec. Dir., Lowell Reg'l Wastewater Util., to George Harding, P.E., Region 1, U.S. EPA, & Kevin Brander, P.E., Mass. Dep't of Envtl. Prot. 1 (Aug. 15, 2014) (A.R. H.8). However, upon review, both the Region and Massachusetts DEP determined that the City's plan "d[id] not meet the basic requirements for such a plan as set forth in EPA's Combined Sewer Overflow Policy." Letter from Denny Dart, Chief, Water Enforcement, Region 1, U.S. EPA, to Mark Young, Exec. Dir., Lowell Reg'l Wastewater Utility 1 (Sept. 15, 2016) (A.R. H.6) ("EPA LTCP Comments Letter"); *accord* Massachusetts DEP LTCP Comments Letter at 2. The Region suggested that the City meet with it "to discuss the work that [the City] needs to undertake to further CSO control" and "a schedule for [the City] to provide additional information" needed to ensure that the long-term control plan complied with the requirements of the CSO policy. EPA LTCP Comments Letter at 3.

A second administrative order addressing the need for the City to submit a long-term control plan was issued with the consent of the City on September 29, 2017. Region 1, U.S. EPA, *Administrative Order on Consent, Docket No. CWA-AO-R01-FY17-16* (Sept. 29, 2017) (A.R. H.9). This order also imposed on the City a compliance schedule for development of a long-term control plan consistent with the CSO Policy and the Clean Water Act. *Id*. at 6-7, 17. Under the 2017 administrative order, the City was required to submit a long-term control plan to the Region for review and approval by December 31, 2019. *Id.* at 6-7. The Region informed the Board at oral argument that the City submitted a revised long-term control plan on the due date and that the Region is reviewing the plan. Oral Argument Transcript 53 (Feb. 20, 2020) ("Oral Arg. Tr."). Thus, the City did not have an approved long-term control plan at the time of permit issuance and the 2019 permit does not have a provision addressing a long-term control plan for managing CSOs from the City's combined collection system. *See* RTC at 39-40.

IV. *PRINCIPLES GOVERNING BOARD REVIEW*

Section 124.19 of Title 40 of the Code of Federal Regulations governs Board review of an NPDES permit. In any appeal from a permit decision issued under part 124, the petitioner bears the burden of demonstrating that review is warranted. *See* 40 C.F.R. § 124.19(a)(4). "[A] petition for review must identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed." *Id.* § 124.19(a)(4)(i). It is not enough for a petitioner to rely on previous statements of its objections, such as comments on a

draft permit. Rather, a petitioner must demonstrate why the permit issuer's response to those objections (i.e., the basis for its decision) is clearly erroneous or otherwise warrants review. *Id*. § 124.19(a)(4)(ii); *see In re City of Taunton*, 17 E.A.D. 105, 111, 180, 182-83, 189 (EAB 2016) *aff'd*, 895 F.3d 120 (1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019). The Board consistently has denied review of petitions that merely cite, attach, incorporate, or reiterate comments previously submitted on the draft permit. *E.g., In re City of Pittsfield*, NPDES Appeal No. 08-19, at 11-13 (EAB Mar. 4, 2009) (Order Denying Review), *aff'd*, 614 F.3d 7 (1st Cir. 2010); *In re Hadson Power 14-Buena Vista*, 4 E.A.D. 258, 294-95 (EAB 1992) (denying review where petitioners merely reiterated comments on draft permit and attached a copy of their comments without addressing permit issuer's responses to comments).

In considering a petition filed under 40 C.F.R. § 124.19(a), the Board first evaluates whether the petitioner has met threshold procedural requirements such as timeliness, standing, issue preservation, and specificity. *In re Indeck-Elwood, L.L.C.*, 13 E.A.D. 126, 143 (EAB 2006). For example, a petitioner must demonstrate that any issues and arguments it raises on appeal have been preserved for Board review by being raised with "a reasonable degree of specificity and clarity" during the public comment period or public hearing. *In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002); *see* 40 C.F.R. §§ 124.13, .19(a)(4)(ii); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000) (holding issue was not preserved when it was not presented in comments "with sufficient clarity to enable a meaningful response").

The Board has discretion to grant or deny review of a permit decision. *Id.* § 124.19; *see In re Avenal Power Ctr., L.L.C.*, 15 E.A.D. 384, 394-95 (EAB 2011) (citing Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980)), *vacated & remanded on other grounds sub nom. Sierra Club v. EPA*, 762 F.3d 971 (9th Cir. 2014). Ordinarily, the Board will deny a petition for review and thus not remand the permit unless the underlying permit decision either is based on a clearly erroneous finding of fact or conclusion of law, or involves an exercise of discretion that warrants review. 40 C.F.R. § 124.19(a)(4)(i)(A)-(B); *accord, e.g., In re Prairie State Generating Co.*, 13 E.A.D. 1, 10 (EAB 2006), *pet. for review denied sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007); *see also* Revisions to Procedural Rules Applicable in Permit Appeals, 78 Fed. Reg. 5281, 5282, 5284 (Jan. 25, 2013). In considering whether to grant or deny a petition for review, the Board is guided by the preamble to the regulations authorizing appeal under part 124, in which the Agency stated that the Board's power to grant review "should be only sparingly exercised," and that "most permit conditions should be

finally determined at the [permit issuer's] level." Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980).

When evaluating a challenged permit decision for clear error, the Board examines the administrative record that serves as the basis for the permit to determine whether the permit issuer exercised "considered judgment." *E.g.*, *In re Gen. Elec. Co.*, 17 E.A.D. 434, 560-61 (EAB 2018); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417-18 (EAB 1997). The permit issuer must articulate with reasonable clarity the reasons supporting its conclusion and the significance of the crucial facts it relied on when reaching its conclusion. *E.g.*, *In re Shell Offshore, Inc.*, 13 E.A.D. 357, 386, 391 (EAB 2007) (holding that "the Region's cryptic and conclusory explanation * * * does not provide a basis" for review of the Region's decision). As a whole, the record must demonstrate that the permit issuer "duly considered the issues raised in the comments" and ultimately adopted an approach that "is rational in light of all information in the record." *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002); *accord In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), *pet. for review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999).

On matters that are fundamentally technical or scientific in nature, the Board typically defers to a permit issuer's technical expertise and experience, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *See Gen. Elec.*, 17 E.A.D. at 514-15; *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490, 510, 561-62, 645-47, 670-74 (EAB 2006). Clear error in a permit issuer's technical determination cannot be "established simply because petitioners document a difference of opinion or an alternative theory." *NE Hub Partners*, 7 E.A.D. at 570. Rather, "[i]n cases where the views of the [permit issuer] and the petitioner indicate bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the [permit issuer]." *Id*. at 567-68.

V. *ANALYSIS*

The City challenges several of the 2019 permit's effluent limits, various monitoring and reporting requirements, and provisions barring bypass of treatment technology and requiring compliance with Massachusetts water quality standards. In addition, the City argues that the Region erred in failing to address in the permit the City's long-term control plan for limiting combined sewer overflows. We ultimately conclude that the City's arguments fail either for procedural reasons or because the City does not to carry its burden of showing that the Region clearly erred, and deny the petition for review.

A. *Challenged Effluent Limitations*

1. *Phosphorus Effluent Limit*

The Region determined that a phosphorus effluent limit was needed for the City's permit after concluding that there is a "reasonable potential" for the Lowell treatment facility's discharges to exceed Massachusetts' water quality criterion for nutrients. *See* Fact Sheet at 24-26; *see also* 40 C.F.R. § 122.44(d)(1)(i). Because the City raises multiple arguments questioning the legality of phosphorus limit and, in particular, the Region's reasonable potential determination, the Region's reasonable potential analysis is briefly described before we examine the City's challenges.

In simplest terms, a reasonable potential analysis involves projecting the concentration of a pollutant in a river downstream from the discharge point and comparing that value to the state water quality criteria. *See* Permit Writers' Manual § 6.3.1. The Region's first step in conducting its reasonable potential analysis was to translate Massachusetts' narrative nutrients water quality criterion to a numeric value for phosphorus. To do this, the Region consulted several EPA policy documents addressing water quality criteria for nutrients such as phosphorus as well as considering site-specific factors related to the Merrimack River. Fact Sheet at 23-24. After considering this information, the Region chose to use a value of 0.1 milligrams per liter ("mg/L") from EPA's 1986 Quality Criteria for Water, commonly referred to as the "Gold Book" due to the color of its cover. *Id.* at 24; *see* Office of Water, U.S. EPA, Doc. No. EPA 440/5-86-001, *Quality Criteria for Water 1986* (May 1, 1986) ("Gold Book"), https://www.epa.gov/sites/production/files/2018-10/documents/quality-criteria-water-1986.pdf.[8]

Having established a numeric value for the Massachusetts narrative water quality criterion applying to phosphorus, the Region next projected the concentration of phosphorus in the Merrimack River downstream from the Lowell treatment facility. To make this projection, the Region considered the volume of the flow of the River, the volume of the Lowell treatment facility's discharge, the upstream concentration of phosphorus in the River, and the phosphorus concentration in the Lowell treatment facility's discharge. Fact Sheet at 24-25; *see*

[8] The Gold Book is a large volume in which water quality criteria recommendations are presented alphabetically by pollutant. Because the hard copy of the document is not paginated, we have cited to page numbers indicated electronically in the PDF version cited in the text of the opinion.

Permit Writers' Manual § 6.3.2. For the River's flow volume, the Region used a common measurement of a river's low flow rate that is based on the lowest seven-day period mean flow that can generally be expected to occur once in ten years, and commonly abbreviated as "7Q10." *See* Fact Sheet at 15 ("The 7Q10 low flow is the mean low flow over 7 consecutive days, recurring every 10 years."); Office of Water, U.S. EPA, EPA 883-B-18-001, *Low Flow Statistics Tools* § 1.2 (Oct. 2018), https://www.epa.gov/sites/production/files/2018-11/documents/low_flow_stats_tools_handbook.pdf ("The 7Q10 is the lowest 7-day average flow that occurs (on average) once every 10 years."). Based on hydrological measurements from a U.S. Geological Survey gauge in the Merrimack River just upstream from the Lowell treatment facility, the 7Q10 value was calculated as 832 cubic feet per second. Fact Sheet at 15.

The Region assumed that the flow volume of the discharge from the Lowell treatment facility would be 32 million gallons per day, the design capacity of the facility. *Id*. at 25. Finally, for the concentrations of phosphorus in the Merrimack River upstream of the Lowell treatment facility, the Region used the median value of 0.0416 mg/L from sampling results, and for the phosphorus concentration in the Lowell treatment facility's discharge, the 95th percentile value of 3.77 mg/L. *Id*.

Based on these values, the Region projected the downstream phosphorus concentration to be 0.251 mg/L. Because this value exceeds the numeric phosphorus criterion of 0.1 mg/L, the Region concluded that there was a reasonable potential for the Lowell treatment facility's discharge to cause or contribute to a violation of the Massachusetts water quality criterion for nutrients. *Id*.

The Region then calculated the phosphorus effluent level using a similar set of assumptions and site-specific values on flow volumes and phosphorus concentration levels. First, the Region determined the difference between the existing level of phosphorus in the Merrimack River upstream of the Lowell treatment facility and the maximum level of phosphorus that is permissible in the River based on the chosen phosphorus limit of 0.1 mg/L. Second, the difference between the existing phosphorus level and the 0.1 mg/L limit was divided by the Lowell treatment facility's flow capacity to derive a phosphorus effluent concentration limit for the 2019 permit of 1.08 mg/L. *Id*. at 25-26.

a. *Compliance with the Applicable EPA Regulation Governing the Establishment of Effluent Limits Based on State Narrative Water Quality Criteria*

The City's first challenge to the phosphorus effluent limit is that the Region violated 40 C.F.R. § 122.44(d)(1)(vi) by relying on the Gold Book-recommended

water quality criterion for phosphorus in setting the effluent limit. Section 122.44(d)(1)(vi) gives permitting authorities three options for establishing effluent limits where the permitting authority has determined that there is a reasonable potential that a pollutant will cause or contribute to an exceedance of a narrative state water quality criterion:

> (A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information * * *; or
>
> (B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or
>
> (C) Establish effluent limitations on an indicator parameter for the pollutant of concern * * *.

40 C.F.R. § 122.44(d)(1)(vi).

The Region explained that the phosphorus effluent limit it chose was authorized under either subparagraph (A) or (B) of section 122.44(d)(1)(vi). RTC at 10. The City contends that neither subparagraph authorizes the effluent limit. Pet. at 8.

The City argues that the Region cannot rely on subparagraph (A) because that subparagraph requires that the effluent limit be based on one of "three specific state documents"—a proposed state criterion, or an explicit state policy or regulation interpreting the narrative criterion—and none are present here. Oral Arg. Tr. at 14. For a similar reason, the City claims that the phosphorus limit cannot be based on subparagraph (B). That subparagraph authorizes the use of a federal water quality criterion in setting an effluent limit, but the City argues the Gold Book value for phosphorus on which the Region relied is not, in fact, such a criterion. Pet. at 7-8.

(i) *Procedural Issues*

There are significant procedural infirmities with the City' petition, which collectively preclude the City from raising its argument about compliance with section 122.44(d)(1)(vi) on appeal to the Board. EPA's regulations require that a petition, among other things: (1) "demonstrate, by providing specific citation or other appropriate reference to the administrative record * * *, that each issue being raised in the petition was raised during the public comment period," [9] 40 C.F.R. § 124.19(a)(4)(ii); (2) "clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed," *id*. § 124.19(a)(4)(i); and (3) in instances where the petition raises an issue addressed by the Region in its response to comments, "provide a citation to the relevant comment and response and explain why the [Region's] response to the comment was clearly erroneous." *Id*. § 124.19(a)(4)(ii). The City's arguments regarding the Region's compliance with section 122.44(d)(1)(vi) fail to satisfy these requirements.

First, the City fails to demonstrate that its argument based on section 122.44(d)(1)(vi) was raised in the public comment period. The City's petition provides only a single sentence claiming that "[t]he issues raised by Lowell in its Petition were raised during the public comment period," citing a non-page-specific reference to the entirety of the Region's ninety-two-page Response to Comments document. Pet. at 3. This level of generality falls far short of what the regulations require of a petitioner to demonstrate that an issue was raised during the public comment period and therefore is preserved for Board review. *See* 40 C.F.R. § 124.19(a)(4)(ii). In any event, in our review of the Response to Comments we have not located a comment contending that the Region did not comply with section 122.44(d)(1)(vi).[10] Accordingly, this issue has not been preserved for Board review. *See In re Tucson Elec. Power*, 17 E.A.D. 675, 689-90 (EAB 2018)

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[9] One exception to this principle is that a new argument or issue may be raised in a petition if that argument or issue was not reasonably ascertainable during the public comment period. *See* 40 C.F.R. §§ 124.13, .19(a)(4)(ii); *see also In re City of Moscow*, 10 E.A.D. 135, 149 (EAB 2001). This is not the case in this appeal.

[10] A commenter—not the City—did argue that it was inappropriate for the Region to rely on the 0.1 mg/L value from the Gold Book and noted in support of this assertion the sentence in the Gold Book, relied on by the City, indicating that EPA was not setting a "national criterion" for phosphorus. Comment from Betsy Reilley, Dir., Envtl. Quality Dep't, Mass. Water Res. Auth. 2 (July 23, 2019) (A.R. C.7). But this commenter did not mention section 122.44(d)(1)(vi) or even make a general argument that the Region had violated EPA regulations in relying on the Gold Book criterion. *See id.* at 2-3.

(holding that argument raised for the first time in a petition "has not been preserved for Board review").

Nor does the City's petition "clearly set forth, with legal and factual support," its argument that the Region could not legally have established the numeric phosphorus criterion under subparagraph (A) of section 122.44(d)(1)(vi). *See* 40 C.F.R. § 124.19(a)(4)(i). The petition has two paragraphs discussing section 122.44(d)(1)(vi); however, all the specifics in those paragraphs address the City's claim that the Gold Book does not contain a federal water quality criterion and thus the Region could not proceed under subparagraph (B). *See* Pet. at 7-8. After its brief recitation of the three regulatory options under section 122.44(d)(1)(vi) for establishing effluent limits,[11] the City summarily concludes that the Region has complied with none of them. *Id*. at 8. At no point, however, does the City explain why the Region's action did not comply with subparagraph (A).[12] A brief and highly truncated summary of a complex regulatory provision followed by a conclusory statement that the provision was violated does not qualify as a "clearly set forth * * * legal * * * contention." *See* 40 C.F.R. § 124.19(a)(4)(i). Only at oral argument did the City first articulate its legal interpretation of subparagraph (A) and why, under the facts of this permit proceeding, the Region could not have legally set the phosphorus effluent limit under that provision. Oral Arg. Tr. at 14. Even if the City's argument based on section 122.44(d)(1)(vi) had been preserved for review, this contention regarding subparagraph (A) comes too late in the process, and thus the argument has been waived. *See In re City of Ruidoso Downs*, 17 E.A.D. 697, 732 n.41 (EAB 2019) (holding that an argument first raised at oral argument "was not properly raised and preserved in the Petition and was not fully briefed before this Board" and thus would not be addressed by the Board), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019).

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[11] In that abbreviated synopsis, the City describes the subparagraph (A) option as allowing establishment of "a numeric criterion based on a proposed state criterion or an explicit state policy or regulation interpreting its narrative criteria." Pet. at 8. However, the City presented no argument as to how the Region failed to comply with subparagraph (A).

[12] In its reply brief, the City asserts that the Region relied only upon subparagraph (B) in setting the phosphorus effluent limit and focuses its § 122.44(d)(1)(vi) argument solely on whether the Region complied with that subparagraph. Reply of Petitioner 7 (Dec. 23, 2019) ("Here the Region purports to take the approach of using a Clean Water Act section 304(a) criterion * * *.").

Finally, the City's argument that the Region cannot justify its phosphorus effluent limit under subparagraph (B) is not properly before the Board because the City fails to address the Region's discussion of this issue in the Response to Comments. *See* 40 C.F.R. § 124.19(a)(4)(ii). The Region did receive a comment, from a commenter other than the City, in which the commenter quoted a sentence in the Gold Book in which EPA stated that it was not recommending a national criterion for phosphorus. *See* Comment from Betsy Reilley, Dir., Envtl. Quality Dep't, Mass. Water Res. Auth. 2 (July 23, 2019). In addressing this comment in the Response to Comments, the Region explained why the Gold Book's recommended phosphorus criterion qualifies as a section 304(a) federal water quality criterion. *See* RTC at 10, 54. The Region noted that although the Gold Book does not include a single criterion, it "presents a 'rationale to support such a criterion.'" *Id*. at 10.[13] Further, the Region described how its decisionmaking process under section 122.44(d)(1)(vi) involved consideration of federal water quality criteria from both the Gold Book and an ecoregional nutrient guidance document, before concluding that the Gold Book criterion was the most appropriate for the Merrimack River. RTC at 9-10, 54; *see* Office of Water, U.S. EPA, EPA Doc. No. 822-B-00-022, *Ambient Water Quality Criteria Recommendations: Rivers and Streams in Nutrient Ecoregion XIV* (Dec. 2000) (A.R. J.8) ("Ecoregional Nutrient Guidance").

In its petition, the City does not attempt to explain how the Region's decisionmaking process under subparagraph (B) of section 122.44(d)(1)(vi), as described in the Response to Comments, was in error. To the contrary, the City's petition simply requotes the sentence from the Gold Book, cited by the other commenter, in which EPA stated it was not recommending a national criterion for phosphorus.[14] The Board has consistently denied review of issues where the petitioner simply reiterates prior comments submitted to the permitting authority without addressing the permit issuer's response to those comments. *See, e.g.*, *In re City of Taunton*, 17 E.A.D. 105, 180, 182-83, 189 (EAB 2016) *aff'd*, 895 F.3d 120

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[13] The Region's fullest response to this commenter appears at pages fifty-four and fifty-five of the Response to Comments. That response cross-references a separate response at pages eight to eleven in which the Region directly addresses the sentence in the Gold Book regarding the lack of a national criterion for phosphorus. *See* RTC at 10, 54.

[14] The petition also briefly asserts that the Gold Book does not adequately support its recommended phosphorus criterion. Pet. at 7. However, at oral argument the City conceded that it was not challenging "EPA on the science" underlying the Gold Book value. Oral Arg. Tr. at 16-17.

(1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019) (denying review on numerous issues because the petitioner failed to address the Region's reason for rejecting its comments); *In re City of Attleboro,* 14 E.A.D. 398, 418 (EAB 2009) (denying review on the basis that by doing no more than reiterate its comments on the draft permit, "the City has provided no reason for the Board to second-guess the Region's technical judgment"). Not only do the permitting regulations explicitly require that a petitioner explain how the Region erred in responding to comments, *see* 40 C.F.R. § 124.19(a)(4)(ii), but as the Board has stated, a petitioner's failure to respond to the Region's explanation in its Response to Comments "leaves us with a record that supports the Region's approach." *In re Westborough*, 10 E.A.D. 297, 311 (EAB 2002).

(ii) *Substantive Arguments on Section 122.44(d)(1)(vi)*

Even if the City's arguments on section 122.44(d)(1)(vi) were properly before the Board, we would deny review. The City's contention that the Region could not establish the phosphorus limits under subparagraph (A) cannot be squared with the provision's plain language. Subparagraph (A) contains two sentences. The first sentence sets forth the broad contours of one option for setting an effluent limit based on a narrative water quality criterion—calculate a numeric water quality criterion for the pollutant that "the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria." 40 C.F.R. § 122.44(d)(1)(vi)(A). The second sentence then provides an example of how such a demonstration can be made—rely on one of several named state documents supplemented by other relevant information. *Id*. The second sentence does not limit the permitting authority to relying on the named state documents in exercising the subparagraph (A) option because it expressly begins: "Such a criterion *may* be derived using" certain state documents. *Id*. (emphasis added). The verb "may" is ordinarily permissive in character, and the City has given no reason why that ordinary meaning should not apply here. *See In re Arecibo & Aguadilla Reg'l Wastewater Treatment Plants*, 12 E.A.D. 97, 130 (EAB 2005).

Interpreting the word "may" here as permissive is consistent with the preamble of the promulgating rule. There, EPA explained that subparagraph (A) "allows the permitting authority to use any criteria that protect aquatic life and human health" and "[t]hus * * * gives the states maximum flexibility in developing water quality-based effluent limits for pollutants for which the state has not adopted a water quality criterion." National Pollutant Discharge Elimination System; Surface Water Toxics Control Program, 54 Fed. Reg. 23,868, 23,876 (June 2, 1989). In fact, the Board has previously held that the "may be derived" language in this subparagraph grants "a permitting authority [] a significant amount of

flexibility in establishing appropriate effluent limits" and demonstrates that a permitting authority is not "required" to rely on a state policy interpreting narrative criteria when such a policy exists. *City of Taunton,* 17 E.A.D. at 148-49. It necessarily follows that a permitting authority is not prevented from establishing an effluent limit under subparagraph (A) by the absence of a proposed state criterion or state policy or regulation explicitly interpreting the state narrative criteria. Hence, the City's interpretation of subparagraph (A) is incorrect.

The City's challenge to the Region's reliance on subparagraph (B) is also flawed. Subparagraph (B) allows a permitting authority to set effluent limits "on a case-by-case basis[] using EPA's water quality criteria." 40 C.F.R. § 122.44(d)(1)(vi)(B). The City interprets the Gold Book's statement that it was not establishing a "national" criterion to mean that the Gold Book did not include any phosphorus water quality criterion. Pet. at 7. But that is incorrect. EPA explains in the Gold Book that due to phosphorus' characteristics the Agency is not establishing a national criterion but presenting a "rationale to support such a criterion," which includes recommended criteria values as well as other considerations that need to be taken into account in applying those criteria. Gold Book at 246, 249; *accord* RTC at 10. The Gold Book generally recommends that "[t]o prevent the development of biological nuisances and to control accelerated or cultural eutrophication," the maximum value for phosphorus in streams as they enter lakes should be 0.05 mg/L and for phosphorus in streams that do not directly discharge to lakes that value should be 0.1 mg/L. *See id*. at 246. The Gold Book, however, caveats those recommendations by explaining that "[t]here are natural conditions, also, that would dictate the consideration of either a more or less stringent phosphorus level." *Id*. at 247. A list of six such factors is provided. *Id*. at 249.

This non-national approach for phosphorus federal water criteria is consistent with (1) the Clean Water Act; (2) subparagraph (B) of section 122.44(d)(1)(vi); (3) the way EPA generally describes federal water quality criteria in the Gold Book; and (4) EPA's subsequent practice in establishing federal water quality criteria for nutrients. The Clean Water Act places few constraints on the form of federal water quality criteria in directing in section 304(a) that EPA "shall develop and publish * * * criteria for water quality accurately reflecting the latest scientific knowledge." CWA § 304(a)(1), 33 U.S.C. § 1314(a)(1). Nothing in this provision requires water quality criteria to be national in scope. Further, subparagraph (B) requires that EPA use federal water quality criteria on a "case-by-case basis" in setting effluent limits—exactly the approach anticipated in the Gold Book for phosphorus. Such a case-by-case approach is also consistent with how EPA describes federal water quality criteria in the introduction to the Gold

Book. EPA wrote that the criteria in the Gold Book "are not rules" but instead "present scientific data and guidance of the environmental effects of pollutants which can be useful to derive regulatory requirements based on considerations of water quality impacts." Gold Book at 2. Finally, relying on advice of scientific experts, EPA again chose to use a non-national approach to federal water quality criteria for nutrients in the Ecoregional Nutrient Guidance. *See* Ecoregional Nutrient Guidance at 1; *see also* Permit Writers' Manual § 6.1.1.2, at 6-6 ("EPA's recommended nutrient criteria are different from most of its other recommended criteria" in that, among other things, "EPA's nutrient criteria are *ecoregional* rather than nationally applicable criteria, and they can be refined and localized using nutrient criteria technical guidance manuals."). The City offers no reason why the Gold Book's non-national approach to the phosphorus water quality criterion is incorrect or renders it inappropriate to be used under subparagraph (B).

For all of the above reasons, we reject the City's assertion that the Region clearly erred in applying section 122.44(d)(1)(vi) to establish a phosphorus effluent limit for the 2019 permit.

b. *The Gold Book and Federal Rulemaking Requirements*

As an alternative to its claim that the Gold Book does not contain a phosphorus water quality criterion, the City argues that the Region erred by relying on the phosphorus criterion in the Gold Book because the Gold Book has not been promulgated as a legislative rule. Pet. at 8-9. The City emphasizes that it is not making a scientific critique of the Gold Book, but rather a strictly legal argument as to why use of the Gold Book in setting the phosphorus effluent limit is unlawful. Oral Arg. Tr. at 16-17. The nature of the City's legal argument is, however, somewhat unclear. At times, the City's petition suggests it is contending that EPA must promulgate the Gold Book's water quality criteria as a legislative rule if they are to be used in setting permit effluent limits. *See* Pet. at 9 ("Every other limit in the City's permit can be tied back to a promulgated water quality standard. Why are nutrients legally any different?"); Lowell Comments at 1 ("We believe it is both necessary and appropriate for EPA to provide the public with the safeguards of rulemaking to evaluate the appropriateness of the Gold Book limits."). At other times, the City appears to base its challenge on the allegation that the Region has applied the Gold Book's nonbinding guidance on water quality criteria as if those criteria are legally binding. Pet. at 11 ("[T]he Region's repeated use of unpromulgated EPA criteria/guidance for nutrients as if the criteria were promulgated state or federal water quality standards underscores its use of those criteria as a binding norm as to Region 1 municipal NPDES permits.").

Given this lack of clarity, we address both arguments. As to the first challenge, EPA has established by rule—40 C.F.R. § 122.44(d)(1)(vi)(B), discussed above—that section 304(a) federal water quality criteria guidance, such as the criteria in the Gold Book, may be used in setting permit effluent limits that ensure compliance with narrative state water quality criteria. The time for challenging that regulation has long since passed.[15] Moreover, "a permit appeal proceeding [before the Board] is not the appropriate forum in which to challenge either the validity of Agency regulations or the policy judgements that underlie them." *In re City of Port St. Joe*, 7 E.A.D. 275, 286 (EAB 1997) (NPDES permit); *see also In re FutureGen Indus. All.*, 16 E.A.D. 717, 724 (EAB 2015) ("Under Part 124, the Board is charged with reviewing permitting decisions and determining whether the permitting authority has acted in accordance with Agency regulations; the Board is not charged with reviewing the underlying Agency regulations."), *pet. for review dismissed as moot sub nom. DJL Farm L.L.C. v. EPA*, 813 F.3d 1048 (7th Cir. 2016); *In re Ford Motor Co*., 3 E.A.D. 677, 682 n.2 (Adm'r 1991) (RCRA permit) ("Section 124.19, which governs this appeal, authorizes me to review contested permit conditions, but it is not intended to provide a forum for entertaining challenges to the validity of the applicable regulations."). Accordingly, this general challenge to the consideration of non-promulgated Gold Book criteria in setting effluent limits will not be reviewed by the Board.

The Board may, however, consider in a permit appeal a claim that a permitting authority erred by applying nonbinding agency guidance in a binding manner. In several cases, the Board has held that a permitting authority may rely on nonbinding policy or guidance in drafting permit terms so long as the permitting authority recognizes that it "must justify the application of a particular policy or guidance on a case-by-case basis and be prepared to address counterarguments raised by others." *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 402 (EAB 1997); *accord In re Allied-Signal, Inc.*, 4 E.A.D. 748, 760 (EAB 1993). Federal courts have followed a similar approach in challenges to agency reliance on nonbinding policy or guidance. For example, in *Steeltech, Ltd. v. EPA*, 273 F.3d 652 (6th Cir. 2001), the Sixth Circuit held that an EPA administrative law judge did not improperly apply a nonbinding penalty policy as a rule where the administrative law judge both (1) recognized that the penalty was "only a policy, not a rule, and that [the judge] had the discretion to depart from [the policy] if there was reason

[15] Over twenty-five years ago, that rulemaking was upheld in the United States Court of Appeals for the District of Columbia Circuit, in litigation initiated under Clean Water Act judicial review procedures. *Am. Paper Inst., Inc. v. EPA*, 996 F.2d 346, 353 (D.C. Cir. 1993).

for doing so"; and (2) "gave detailed reasons for applying the [policy] in response to Steeltech's arguments against doing so." *Id*. at 655; *accord Panhandle Producers & Royalty Ass'n v. Econ. Regulatory Admin*., 847 F.2d 1168, 1175 (5th Cir. 1988) (explaining that a nonbinding policy "must be considered 'subject to complete attack' before being applied [by an agency] in particular cases" and upholding an agency's reliance on such a policy because its response to arguments opposing the policy were "thorough and fair").

In its public comments on the draft permit, the City objected to the Region's use of the Gold Book phosphorus criterion, arguing that the Gold Book "is clearly being applied as a binding norm." Lowell Comments at 1. In support, the City asserted that the Region "is imposing the same Gold Book limit on all of the dischargers to the Merrimack River." *Id*.

The Region responded to this comment by referencing its discussion in the Fact Sheet of the phosphorus effluent limit and summarizing its decisionmaking process reflected there. RTC at 9-11. The Region explained that in deriving phosphorus limits that are protective of the Massachusetts' narrative water quality criterion for nutrients, it had considered several sources of information including the Gold Book, EPA's Ecoregional Nutrient Criteria, and EPA's Nutrient Criteria Technical Guidance Manual: Rivers and Streams. *Id*. at 9. The Region stressed that these documents "were used as *guidance* to interpret the State's narrative criterion for nutrients." *Id*. at 10. The Region also explained that it had "over a period of years endeavored to utilize its experience and technical expertise to fashion a consistent technical approach to implement [Massachusetts'] narrative water quality standard for nutrients," while at the same time applying this analysis in individual permit decisions, including the decision on the 2019 permit, "on a permit-specific basis." *Id*.

Our examination of the record has confirmed that the Region did not apply the Gold Book in a binding manner. In the Fact Sheet, the Region focused on site-specific information and two primary guidance documents: the Gold Book and the Ecoregional Nutrient Guidance for the New England area.[16] Fact Sheet at 23. As noted by the Region, the Gold Book recommended a phosphorus criterion of 0.1 mg/L for streams not discharging directly into lakes and the Ecoregional Nutrient Guidance recommended the significantly more stringent phosphorus criterion for

[16] The Region also considered technical guidance on nutrients criteria. Fact Sheet at 24 (referencing Office of Water, U.S. EPA, EPA Doc. No. 822-B-00-002, *Nutrient Criteria Technical Guidance Manual: Rivers and Streams* (July 2000) (A.R. J.2).

similar streams of 0.03125 mg/L. *See id*. The Region chose to use the less stringent value from the Gold Book after considering sampling data on phosphorus levels upstream from the Lowell treatment facility showing median phosphorus levels of 0.04160 mg/L. *Id*. at 24. The Region explained that the Gold Book recommendation was based on "empirical observations of a causal variable (i.e. phosphorus) and a response variable (i.e. algal growth) associated with designated use impairments," whereas the Ecoregional Nutrient Guidance recommendation was set using river characteristics from the region that "represent minimally impacted conditions." *Id*. Further, after noting that the Gold Book had specified that the phosphorus criterion may need to be adjusted based on the natural conditions of the water body, the Region retained the 0.1 mg/L recommendation because the Region was "not aware of any evidence that the Merrimack River is unusually susceptible to euthrophication impacts." *Id*.

Given these explanations of the Region's decisionmaking in the Response to Comments and Fact Sheet, we conclude that the Region recognized that the Gold Book was a guidance document, not a binding rule, and applied it in accord with that understanding. Specifically, those documents evidence that the Region was sensitive to the particular characteristics of the Merrimack River in determining that the Gold Book was the most appropriate guidance document to rely upon and the Region evaluated whether the Gold Book recommended criterion needed to be modified to address the conditions of the Merrimack River. Moreover, the Region's detailed explanation of its decisionmaking process and its concern with applying water quality criteria guidance in a consistent manner across permits is a more than adequate response to the City's contention that the Region applied the Gold Book in a binding manner in this permit decision. *See Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 31 (1st Cir. 2012) (concluding that Region 1 in following a similar process before relying on the Gold Book phosphorus recommendation for a different NPDES permit "did not blindly follow any of these recommended limits"). That is particularly the case here in that (1) the City has cited to no instances documenting the Region's alleged rigid adherence to the Gold Book in the face of reasoned arguments opposing the Gold Book's recommended value; (2) the City has not proposed a value other than the Gold Book value in this permit proceeding; and (3) the City has been clear it is *not* challenging the scientific basis for the Gold Book's 0.1 mg/L water quality criterion. Oral Arg. Tr. at 16-17. In sum, the Region permissibly relied on the Gold Book because it recognized that the Gold Book was not binding, applied the Gold Book only after considering site-specific information, and thoroughly responded to the City's objection to its use of the Gold Book.

In its petition, the City makes two additional arguments in support of its claim that the Region has applied the Gold Book in a binding manner. Both arguments respond to assertions by the Region in the Response to Comments. First, the City argues that the Region's reliance on the Gold Book to interpret the time period to which the Gold Book's recommended criterion should apply (e.g., daily, weekly, monthly, or annual averages) "underscores the Region's arbitrary and non-site specific use of the Gold Book guidance numbers as if they were adopted standards." Pet. at 14. We disagree. In the Response to Comments, the Region compared the Gold Book's description of its criterion as "not to be exceeded at any time" with the Ecoregional Nutrient Guidance's pairing of its recommended criterion with an average value measured over the growing season. RTC at 14. The Region reasoned that if it used a longer averaging period, as the City advocated, it would need to adopt the significantly more stringent criterion value in the Ecoregional Nutrient Guidance. *Id*. The Region also pointed out that phosphorus discharges can "result in adverse short-term impacts on receiving water quality and aquatic life." *Id*. For example, the Region noted that "[d]uring the growing season, when light and temperature are optimal for plant growth and the receiving water is subject to elevated nutrient concentrations, aquatic plant biomass growth can proliferate in relatively short periods of time." *Id*. This technical inquiry into the appropriate averaging period to use with the Gold Book criterion shows that the Region did not apply the Gold Book in a binding fashion. *See In re City of Attleboro,* 14 E.A.D. 398, 444-46 (EAB 2009) (upholding the Region's use of the Gold Book to establish a daily maximum value rather than a seasonal average because the Region "provided a sound and reasonable explanation of its application of the Gold Book recommended concentration").

A second argument the City raises is that while the Region claims to have considered site-specific factors in the selection of the Gold Book-recommended criterion, in fact, the site-specific factors relied upon relate to calculation of the permit's phosphorus effluent limit, not the choice of the Gold Book criterion as the numeric level to use in applying the Massachusetts' narrative water quality criterion for nutrients. Pet. at 12-13. According to the City, "although [the Fact Sheet] goes through the detailed calculations that lead to the 1.08 mg/L [effluent] limit, [the Region] appears to include no facts or circumstances that are claimed to support the site-specific use of the [Gold Book-recommended] number for this Permit." *Id*. at 13.

The City is incorrect in contending that all site-specific factors considered by the Region related only to the determination of the phosphorus effluent limit value. To the contrary, as discussed above, the Fact Sheet shows that the Region considered site-specific factors such as phosphorus levels in the Merrimack and the

Merrimack's lack of proclivity toward eutrophication in deciding to rely on the Gold Book in translating the narrative nutrients criterion to a numeric value. The Region, in responding to the City's comment asserting a lack of site-specific factors, may have globally referred to all site-specific factors relied upon in selecting a numeric phosphorus criterion and the permit's phosphorus effluent limit without clearly differentiating which factors only applied to the former determination.

For example, the Region at times refers to phosphorus discharge levels from the Lowell treatment facility as a site-specific factor it considered in choosing to use the Gold Book criterion without further explaining how the level of phosphorus discharge from the Lowell treatment facility relates to choosing a criterion that reflects the level at which phosphorus causes health or environmental effects.[17] *See* RTC at 10 (describing site-specific factors related to selection of Gold Book criterion as including information on phosphorus levels in both receiving waters and the Lowell treatment facility's discharge); Oral Arg. Tr. at 74 (same). But the Region's potential overinclusiveness in listing site-specific factors considered in its choice of the Gold Book recommendation does not change the fact that the Region evaluated site-specific factors in selecting a numeric phosphorus value for Massachusetts' narrative nutrients criterion. Thus, the City's argument on this point lacks merit.

The City has not carried its burden of showing that the Region applied the Gold Book in a binding fashion, and therefore has failed to establish clear error by the Region in relying on the Gold Book-recommended phosphorus criterion in translating Massachusetts' narrative nutrients criterion to a numeric value for phosphorus.[18]

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[17] On the other hand, the level of the Lowell treatment facility's discharge is clearly a site-specific factor relevant to whether a phosphorus effluent limit was needed for the City's permit. The Fact Sheet shows that phosphorus discharge levels were a necessary part of the reasonable potential calculation. Fact Sheet at 25.

[18] In a related vein, the City contends that the Region's reliance on the Gold Book in developing the phosphorus effluent limit in the 2019 permit is not consistent with a recent executive order titled "Promoting the Rule of Law Through Transparency and Fairness in Civil Administrative Enforcement and Adjudication," Exec. Order No. 13,892, 84 Fed. Reg. 55,239 (Oct. 15, 2019). Pet. at 8, 12. Under the order, an "agency may not treat noncompliance with a standard of conduct announced solely in a guidance document as itself a violation of applicable statutes or regulations." 84 Fed. Reg. at 55,240. We do not ordinarily consider on appeal a new law or policy issued subsequent to the Region's

c. *Challenges to the Region's "Reasonable Potential" Analysis*

The City claims that there are two flaws in the Region's analysis of whether the phosphorus discharges from the Lowell treatment facility have the "reasonable potential" to contribute to an exceedance of the Massachusetts water quality criterion for nutrients: (1) the Region's use of a steady-state dilution model for calculating phosphorus levels in the Merrimack River that will result from the Lowell treatment facility's discharge; and (2) the Region's assumption for modeling purposes that the water flow of the Merrimack River would be at the critical low flow level. For the reasons explained below, we find no clear error in the Region's reasonable potential analysis.

As an initial matter, however, we observe that conducting a reasonable potential analysis is an inherently technical determination. *See In re D.C. Water & Sewer Auth.*, 13 E.A.D. 714, 742 (EAB) (holding that establishing an effluent limit "is inherently a technical issue"), *pet. for review dismissed for lack of juris.*, No. 08-1251 (D.C. Cir. Dec. 12, 2008). Specifically, the choice of what model to use in "deriv[ing] effluent limitations is a technical judgment that falls within the Region's discretion and expertise." *City of Attleboro*, 14 E.A.D. at 411. A petitioner bears a heavy burden in seeking review of issues, such as a determination on reasonable potential, that are essentially technical in nature. *Id*. "'Clear error or reviewable exercise of discretion are not established simply because the petitioner presents a different opinion or alternative theory regarding a technical matter, particularly when the alternative theory is unsubstantiated.'" *In re Scituate Wastewater*

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final permit decision, as is the case with this executive order. *See In re Russell City Energy Ctr., L.L.C.*, 15 E.A.D. 1, 82 (EAB 2010) (noting that Administrator has concluded that "'the proper point in time for fixing applicable [] standards and guidelines [on appeal] is when the [permit issuer] initially issues a final permit'") (quotation omitted), *pet. for review denied sub nom. Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F. App'x 219 (9th Cir. 2012). And the City offers no reason why we should depart from this practice. Additionally, the executive order states that "[t]his order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States * * *." 84 Fed. Reg. at 55,242. In any event, as the discussion in the above text indicates, the City had the opportunity in the permit proceeding to argue that the Region applied the Gold Book guidance as a rule. After considering the City's arguments, we concluded that the Region did not clearly err in relying on the Gold Book in setting a phosphorus effluent limit because the Region did not treat the Gold Book as determinative of the meaning of the Massachusetts nutrients criterion but only as a recommendation to be considered alongside other guidance documents and relevant site-specific factors.

Treatment Plant, 12 E.A.D. 708, 718 (EAB 2006) (quoting *In re MCN Oil & Gas Co*., UIC Appeal No. 02-03, at 25-26 n.21 (EAB Sept. 4, 2002) (Order Denying Review)).

(i) *Use of a Steady-State Model for Projecting Phosphorus Levels*

Where data on flow and pollutant levels are available on the effluent and receiving water, a reasonable potential analysis generally involves determining the instream concentration of a pollutant discharge using modeling techniques. *See* Permit Writers' Manual § 6.3.1; *see id*. § 6.3.3 (conducting reasonable potential analysis in absence of data). Commonly, steady-state dilution modeling is used for toxic pollutants, but the EPA Permit Writer's Manual recommends that for nutrients "the effects of biological activity and reaction chemistry should be modeled, in addition to the effects of dilution, to assess possible impacts on the receiving water." *Id*. § 6.3.2.1., at 6-24. For the 2019 permit, the Region used a steady-state model in conducting the reasonable potential analysis for phosphorus because a model that takes into account biological activity and reaction chemistry is not currently available. RTC at 10. In light of the EPA guidance, the City asserts that this approach was a clear error. Pet. at 9.

The City argues that instead of using a steady-state model to examine reasonable potential, the Region should delay conducting its reasonable potential analysis until the City could complete development of "a Qual2K reactive model (a typical EPA-approved approach) for the Lowell reach of the Merrimack River." Pet. at 9-10; *see* Lowell Comments at 1. This model, the City argues, would "support[] a more accurate evaluation of reasonable potential for the City's discharge to cause or contribute to any water quality impairment associated with nutrients." Pet. at 10; *see* Lowell Comments at 1. In the interim, the City suggests that the Region should have adopted a phosphorus effluent limit based on the Lowell treatment facility's average phosphorus discharge rate and required the City "to optimize its ongoing Plant treatment facilities upgrade." Pet. at 10; *see* Lowell Comments at 1. The City states that a two-year timeframe is needed to complete the facilities upgrade. Pet. at 10; *see* Lowell Comments at 1.

The Region rejected the City's proposal, observing that the City was asking the Region to forbear from establishing an effluent limit the Region had determined was necessary to meet Massachusetts' nutrients water quality criterion "pending development of a water quality model, whose completion date the City does not commit to and whose results obviously are unknown." RTC at 11. The Region concluded that such an approach is inconsistent with the Clean Water Act and implementing regulations that require EPA to "include limits in permits necessary to assure compliance with water quality standards." *Id*.; *see* CWA § 301(b)(1)(C),

33 U.S.C. § 1311(b)(1)(C). For similar reasons, the Region rejected the City's suggested alternate permit provisions, writing:

> The commenter's proposals of either including an interim limit based on an arbitrary long-term average performance (since the facility has not in the past been subject to any nutrient controls) or based on technological capabilities associated with the plant upgrade are not considerations based on water quality and have no purchase under Section 301 from the standpoint of *establishing* water quality-based effluent limitations.

RTC at 11.

Additionally, the Region stressed that it "is prudent to adopt a reasonably conservative, or protective, approach in aquatic systems at risk of cultural eutrophication" because "[o]nce the [eutrophication] cycle is underway, it is much more difficult and costly to restore designated uses in the receiving waters." RTC at 12. The Region concluded that taking into account "all available information * * * the steady-state model applying the Gold Book guidance * * * is a reasonable basis for the permit limit at this time." *Id*. at 11. The Region noted that "this permit is long expired, and EPA is in the process of clearing a very substantial permit backlog." *Id*. at 10. At the same time, the Region stated that "[s]hould the permittee complete the model, it may submit that information to EPA as a permit modification and EPA will adjust the limit up or down, as warranted." *Id*. at 11. Finally, the Region included in the permit a fifty-four-month compliance schedule, to give the City time to plan, design, and construct the facility improvements needed to meet the new phosphorus effluent limit. *Id*. at 43.

The First Circuit and the Board faced a similar challenge to nutrient effluent limits in a NPDES permit in the *Upper Blackstone* case. There, the permittee also argued that EPA Region 1 should have delayed issuing a permit renewal while the permittee completed a new computer model of fate and transport of discharged nutrients. *See Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 21 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013); *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 636 (EAB), *pet. for review dismissed for lack of juris. sub nom. Conserv. Law Found., Inc. v. EPA*, No. 10-2141 (1st Cir. Dec. 6, 2010). Citing to the requirement in the Clean Water Act that permits must be renewed every five years, the First Circuit concluded that the Act did not allow the Region to wait "indefinitely until better science [i.e., a new computer model] can be developed, even where there is some uncertainty in the existing data." *Upper Blackstone*, 690 F.3d at 22. The court explained that:

> In almost every case, more data can be collected, models further calibrated to match real world conditions; the hope or anticipation that better science will materialize is always present, to some degree, in the context of science-based agency decisionmaking. Congress was aware of this when it nonetheless set a firm deadline for issuing new permits.

Id. at 23. This reasoning led the First Circuit to conclude that "under the [Clean Water Act] the EPA is required to exercise its judgment even in the face of some scientific uncertainty." *Id*. Relying on this principle, the court held that the Region did not act arbitrarily in issuing the permit without waiting for the permittee's model. In reaching this result, the First Circuit stressed that there was no estimated date for the completion of the model, the Region had found that "cultural eutrophication becomes more difficult to address the longer it is left unchecked," the permittee had "multiple opportunities" to submit any new information gleaned from its computer model to the Region, and the permittee was given a five-year compliance schedule for the permit's new nutrient limits. *Id*. at 22-24.

The City has failed to carry its burden of establishing that the Region clearly erred in exercising its technical judgment on how to conduct the reasonable potential analysis for phosphorus. Just as in *Upper Blackstone*, the Region did not clearly err in using a steady-state model rather than waiting on the City to develop a different model given that: (1) the permit renewal was overdue by almost ten years; (2) the City had not committed to a fixed date in completing its Qual2K model; (3) the advice in the Permit Writers' Manual to use a Qual2K-type model is a recommendation, not a requirement; (4) the Merrimack River is already impaired due to its phosphorus levels, and eutrophication caused by phosphorus becomes more difficult and costly to reverse once that process has begun; (5) the Region acted based on the best currently available data in using a steady-state model; (6) the Region agreed to consider information produced by the as-of-yet unfinished model in the future, and modify the permit, as appropriate; and (7) the 2019 permit gives the City fifty-four months to make the improvements necessary to come into compliance with the phosphorus limit. *See City of Taunton*, 17 E.A.D. at 447 (holding that "nothing in the [Clean Water Act], its implementing regulations, or Board precedent requires the Region to do the type of modeling or causation analysis that the City complains is lacking in order to determine the existence of a reasonable potential").

(ii) *Low Flow Data and the Reasonable Potential Analysis*

An important input to any model used in a reasonable potential analysis is the flow volume of the receiving water—here, the Merrimack River. The City argues that the Region erred by using 7Q10 flow data (i.e., data showing the lowest flow data for a seven-day period over ten years) in its reasonable potential calculations. The City contends that 7Q10 conditions are not realistic because they occur so irregularly and that instead the Region should have used the "recommend[ation]" from the Permit Writers' Manual that permitting authorities evaluate nutrients using seasonal or annual periods. Pet. at 10-11. Although the City concedes that Massachusetts water quality regulations require that water quality criteria must be met in 7Q10 conditions for aquatic life criteria, the City argues that the nutrients criterion is not an aquatic life criterion, but instead only protects against "'nuisance conditions.'" *Id*. at 11; *see* 314 Mass. Code Regs. § 4.03(3), (3)(a) ("The Department will determine the most severe hydrologic condition at which water quality criteria must be applied" and that "[f]or rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years.").

The City's arguments are not persuasive. Contrary to the City's argument, a phosphorus criterion is an "aquatic life" criterion. Massachusetts' water quality standards define "aquatic life" as "[a] native, naturally diverse, community of aquatic flora and fauna including, but not limited to, wildlife and threatened and endangered species." 314 Mass. Code Regs. § 4.02. And the Region explained that one of the reasons it was limiting phosphorus discharges was to protect such aquatic life: too much phosphorus can stimulate "excessive growth of aquatic plants and algae within freshwater systems, negatively impact[ing] water quality and * * * interfer[ing] with the attainment of designated uses by * * * "reducing the quality and availability of suitable habitat for aquatic life." Fact Sheet at 23. The Board held in a prior NPDES permit appeal by a Massachusetts town that the Region did not err in basing permit limits for phosphorus on 7Q10 conditions because "Massachusetts' water quality standards require compliance during 'the most severe hydrologic conditions,' * * * or 7Q10 conditions for rivers and streams." *In re City of Attleboro,* 14 E.A.D. 398, 441 (EAB 2009) (citation omitted).

Accordingly, the City fails to establish any clear error in the Region's decision to assume 7Q10 conditions in its reasonable potential analysis and in calculating the phosphorus effluent limit.

d. *The Lack of a Total Maximum Daily Load for Phosphorus*

The City argues that the Region should have promulgated a Total Maximum Daily Load ("TMDL") for phosphorus in the Merrimack River "to determine specifically the allowable [phosphorus] loading from all of the relevant dischargers." Pet. at 13. This failure, according to the City, was "an error of law." *Id*. at 14.

TMDLs are part of the Clean Water Act scheme for helping to ensure that water quality standards are met in waters that are still impaired despite the adoption of technology-based effluent limitations. Under section 303(d) of the Clean Water Act, states must identify such impaired waters and then institute a planning process for bringing them into compliance with water quality standards, including setting priorities for establishing TMDLs for individual pollutants in these waters. CWA § 303(d)(1), 33 U.S.C. § 1313(d)(1); *see* 40 C.F.R. § 130.7(b)(1). A TMDL "is a calculation of the maximum amount of a single pollutant that a waterbody can receive and still meet water quality standards and an allocation of that amount to the pollutant's sources." Permit Writers' Manual 6.2.1.2, at 6-14; *see* 40 C.F.R. §§ 130.2(i), .7(c). Where TMDLs have been established, the NPDES permitting authority must ensure that effluent limitations are consistent with the assumptions and requirements of any available wasteload allocations established by those TMDLs. 40 C.F.R. § 122.44(d)(1)(vii)(B).

One public commenter on the draft permit argued that "[t]he Clean Water Act requires states to develop TMDLs where numeric criteria are not available" and therefore, "[t]he next step must be development of a TMDL for phosphorus loading." Letter from Betsy Reilley, Dir., Envtl. Quality Dep't, Mass. Water Res. Auth., to Meridith Finegan, U.S. EPA Region 1 & Claire Golden, Mass. Dep't of Envtl. Prot. 3 (July 23, 2019) (A.R. C.7). The commenter stated that the TMDL process "requires public input and allows for scientific review," and thus prevents the Region from "apply[ing] arbitrary criteria that have not gone through a review and public participation process." *Id*.

The Region responded to this comment by explaining that "neither the [Clean Water Act] nor EPA regulations require that a TMDL, or its equivalent, be completed before a water quality-based limit may be included in an NPDES permit." RTC at 54. Expanding on the TMDL issue, the Region summarized the regulatory language and regulatory history supporting its conclusion that "an approved TMDL is not a precondition to the issuance of an NPDES permit for discharges to an impaired waterway." *Id*. at 54. Finally, the Region cited to a Board decision, *In re Upper Blackstone Water Pollution Abatement District*, 14 E.A.D.

577, 604-05 (EAB 2010), which held that a permitting authority can proceed to determine permit effluent limits where a TMDL is needed but has yet to be established. RTC at 55. In that case, we stated that Clean Water Act "regulations specifically contemplate that permit issuers will establish numeric permit limits when there is no TMDL or wasteload allocation." *Upper Blackstone*, 14 E.A.D. at 604; *accord In re City of Ruidoso Downs*, 17 E.A.D. 697, 733 (EAB 2019), *appeal docketed sub nom. Rio Hondo Land & Cattle Co. v. EPA*, No. 19-9531 (10th Cir. May 23, 2019); *In re City of Taunton*, 17 E.A.D. 105, 144 (EAB 2016) *aff'd*, 895 F.3d 120 (1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019). .

Although the City asserts in its petition that the Region committed a legal error in establishing a phosphorus effluent limit in the absence on a phosphorus TMDL, the City offers no explanation of why or how the Region erred in concluding in the Response to Comments that it was legally authorized to establish a phosphorus effluent limit even though no phosphorus TMDL had been established. Rather, the City argues that the Region should have promulgated a phosphorus TMDL before establishing a phosphorus effluent limit because (1) the Gold Book "refers to use of a TMDL-like procedure for regulating discharges of [phosphorus];" and (2) the use of the TMDL approach would have "avoid[ed] the piecemeal over-regulation or under-regulation that may result for Lowell and the other permittees from the Region's current procedure." Pet. at 13.

These arguments are both new—they were not included in the comments on the draft permit—and unresponsive to the Region's legal conclusion in the Response to Comments that neither the statute nor regulations required the Region to wait for promulgation of a phosphorus TMDL before establishing a phosphorus effluent limit. On the latter point, the Region's interpretation of the Clean Water Act and its regulations is not called into question by an argument noting that a *guidance document* discusses a "TMDL-like procedure" as one among several ways of regulating phosphorus discharges, *see* Gold Book at 248 (suggesting that "[a]nother method to control the inflow of nutrients, particularly phosphates, into a lake is that of prescribing an annual loading to the receiving water"), or by a claim that there may be regulatory efficiencies in finalizing a TMDL before issuing an effluent limit.

Accordingly, we deny review of this issue. Arguments not raised in the public comments may not be raised for the first time on appeal. *See* 40 C.F.R. § 124.19(a)(4)(ii); *see* Part V.A.1.a(i), above. Further, to obtain review of an issue addressed in the permit issuer's response to comments, a petitioner must explain why the permit issuer's comment response is clearly erroneous or otherwise warrants review. 40 C.F.R. § 124.19(a)(4)(ii); *see* Part V.A.1.a(i), above. Here,

the City has failed to offer an argument explaining why the Region's legal conclusion that it could set a phosphorus effluent limit in the absence of a phosphorus TMDL was legally incorrect. Additionally, by failing to counter the Region's legal argument in the Response to Comments, the City necessarily fails to sustain its burden of showing the Region's conclusion in the Response to Comments was clearly erroneous.

2. *Wastewater Flow Effluent Limit*

The City presents a series of arguments opposing the effluent limit in the permit that restricts flow through the City's treatment facility to 32 million gallons per day. The City contends that the Region lacks authority to impose an effluent limit on discharge flow and that a flow limit is unnecessary and counterproductive.[19]

a. *Authority to Establish an Effluent Limit on Discharge Flow*

The City argues that the Region lacks authority to set effluent limits on flow through its treatment facility because "flow" is not a "pollutant" under the Clean Water Act. According to the City, "[t]he most fundamental precept of NPDES permitting is that permits limit 'pollutants'" and "[p]ollutants are chemical, biological and other polluting substances, not including flow or rate of flow." Pet. at 16.

To support its argument, the City relies on the unpublished federal district court decision in *Virginia Department of Transportation v. EPA*, Civil Action No. 1:12–CV–775, 2013 WL 53741 (E.D. Va. 2013). *See* Lowell Comments at 3. That case involved a challenge to a TMDL that EPA had established for Accotink Creek in Virginia. The relevant statutory provision—Clean Water Act section 303(d)—requires that states, or EPA when a state fails to act, "shall establish for the waters identified * * * the total maximum daily load, for those pollutants which the Administrator identifies." CWA § 303(d)(1)(C), (d)(2), 33 U.S.C. § 1313(d)(1)(C), (d)(2). Although the TMDL addressed a concern with high levels of the pollutant "sediment" in the Creek, EPA wrote the TMDL in terms of stormwater flow rather

[19] The City is concerned that a flow limit restricts its ability to manage the flow in its collection system during wet weather events in the most environmentally sound manner. The City's desire to eliminate the flow effluent limit is intertwined with its challenge to the permit provision prohibiting unapproved bypass of treatment capacities at its treatment facility. We discuss the City's concern regarding wet weather flow in Part V.C, below.

than sediment. EPA explained that it was using stormwater flow as a "surrogate" for sediment because "framing the TMDL in terms of stormwater flow rate is superior to simply expressing it in terms of maximum sediment load." *Va. Dep't of Transp*. at *3.

The district court concluded that this approach was precluded by the statutory language specifying that TMDLs were to be established "for the appropriate pollutants." *Id*. (paraphrasing statutory language in CWA § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C)). Finding this language unambiguous, the court reasoned that "Congress has spoken directly on the question at issue, and its answer is that EPA's authority does not extend to establishing TMDLs for nonpollutants as surrogates for pollutants." *Id*. at *4. Because stormwater flow is not a pollutant, the court held that "EPA is not authorized to regulate it via TMDL." *Id*. at *5. At the same time, the court recognized that the statute granted EPA broader authority outside the context of section 303(d)(1)(C) pertaining to TMDLs. Citing to section 304(b) covering effluent limitations, the court noted that "power to regulate effluents is expressly granted to the EPA in the relevant statutory section." *Id*. at *3.

In the Response to Comments, the Region explained that it was not asserting the authority to regulate flow as a pollutant,[20] but rather was including the flow effluent limit in the permit under the directive in Clean Water Act section 402(a) that the "'Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of,'" among other things, section 301, which requires compliance with technology- and water quality-based effluent limitations. RTC at 17 (quoting CWA § 402(a), 33 U.S.C. § 1342(a)). The Region provided two bases as to how the flow limit is a condition authorized under section 402(a). First, the Region pointed to the NPDES regulation requiring that permits contain a condition specifying that the permittee shall "'at all times properly operate and maintain all facilities and systems of treatment and control * * * which are installed or used by the permittee to achieve compliance with the conditions of this permit.'" *Id*. (quoting 40 C.F.R. § 122.41(e)). Emphasizing that the flow limit is based on the design capacity of the treatment facility, the Region concluded that the flow limit is a condition that is "appropriate in order to assure that Lowell operates its

[20] Alternatively, the Region argues in its response brief that it is authorized to set an effluent limit on flow from the Lowell treatment facility because the Clean Water Act "defines 'pollutant' to include, *inter alia*, 'municipal * * * waste[]' and 'sewage.'" Resp. Br. at 32. Because we are upholding the Region's primary justification for the flow effluent limit, we do not address this alternative argument.

facility to comply with its permit's technology- and water quality-based effluent limits." *Id*.

Second, the Region explained that a condition limiting effluent flow preserves the integrity of its reasonable potential calculations and the permit's pollutant effluent limits because the Region based both these calculations and effluent limit determinations "on a presumed maximum wastewater effluent discharge from the facility" of 32 million gallons per day. *Id*. at 18; *see* Fact Sheet at 24-25 (assuming that wastewater flow from the Lowell treatment facility would be at the design capacity of 32 million gallons per day). If flow limits exceed the assumed maximum flow, the Region pointed out, then the Region may have erroneously concluded that a pollutant did not have a reasonable potential to cause or contribute to an exceedance of water quality standards or that the permit's pollutant effluent limits assure compliance with Massachusetts' water quality standards. RTC at 18. The Region called attention to the NPDES regulation specifying that "permit effluent limitations * * * shall be calculated based on design flow." 40 C.F.R. § 122.45(b)(1). Given the critical relationship of the flow level to the integrity of the Region's determination that the permit's effluent limits would assure compliance with water quality standards, the Region concluded that the effluent limit on flow is a condition authorized by section 402(a)(2) and necessary to avoid the regulatory prohibition on "the issuance of an NPDES permit '[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States.'" RTC at 18 (quoting 40 C.F.R. § 122.4(d)).

Finally, the Region rejected the City's reliance on *Virginia Department of Transportation,* explaining that that decision was rendered under Clean Water Act section 303 addressing TMDLs and not the Act's NPDES permit provision. *Id*.

The City's petition does little to rebut the Region's reasoning in the Response to Comments, in large part simply reiterating the arguments the City made during the public comment on the draft permit. *Compare* Lowell Comments at 2-4 *with* Pet. at 15-18. At most, the City points to a fragment of the language from section 402(a)(2) cited by the Region (authorizing the Administrator to establish "such other requirements as [the Administrator] deems appropriate")[21] and argues that reference to such statutory language does not "adequately

[21] The City mistakenly attributes this language to Clean Water Act § 301. Pet. at 18.

acknowledge[] the limitations of the term 'pollutants.'"[22] Pet. at 18. The City's petition, however, never substantively addresses the Region's detailed argument that the Clean Water Act and its regulations authorize the Region to establish conditions for permits—such as a limitation on discharge flow—to assure proper operation of the facility's treatment system and compliance with the requirements of water quality standards.[23] By failing to grapple with the substance of the Region's position, the City leaves the Region's analysis unrebutted. *See* Part V.A.1.a(i) (discussing how a failure to rebut the Region's Response to Comments leaves a record that supports the Region's decision).

Accordingly, we conclude that the City has not shown that the Region clearly erred in determining that it was legally authorized to establish a limit on the flow from the Lowell treatment facility.

b. *The Necessity or Value of a Wastewater Flow Effluent Limitation*

In its comments, the City claimed that the flow limit is "completely unnecessary" to protect public health or the environment and that, in fact, a flow limit is "counterproductive" to achieving those goals. Lowell Comments at 2; *see*

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[22] The City expands slightly on this argument in its reply brief, arguing that § 301, although not expressly mentioning pollutants, is contextually directed at pollutants, and thus cannot provide authority for the flow limit. Reply Br. at 8. But even here the City does not focus on the core of the Region's rationale—that § 402(a) and its implementing regulations authorize permit conditions directed at assuring proper operation of treatment systems and compliance with water quality standards. Unlike the statutory language in § 303(d)(1)(C) for TMDLs, § 402(a) does not specify that permit conditions must be for "pollutants." As noted above, the *Virginia Department of Transportation* court affirmed that EPA's authorities over effluents under other provisions of the statute are not as restrictive as the TMDL provision. In any event, we will not consider new arguments raised in reply briefs. *See* 40 C.F.R. § 124.19(c)(2) (barring inclusion of new issues or arguments in reply briefs); *see, e.g., In re City of Taunton*, 17 E.A.D 105, 183 (EAB 2016), *aff'd*, 895 F.3d 120 (1st Cir. 2018), *cert. denied*, 139 S. Ct. 1240 (Feb. 19, 2019); *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490, 595 (EAB 2006) (holding that new arguments raised in reply brief are equivalent to late-filed appeals).

[23] In its petition, the City does object that the Region has not explained its reasoning as to why a flow limit is "necessary as an appropriate operation and maintenance requirement." Pet. at 18. The Region reasonably responded that the flow limit is based on the design of the facility and that "[r]equiring the Petitioner to operate within the constraints of its design logically furthers the requirement that Petitioner 'at all times properly operate' its Facility." Resp. Br. at 32-33.

Pet. at 15. As to lack of necessity, the City argued that the permit's concentration- or mass-based pollutant effluent limits are sufficient to protect public health and the environment. Lowell Comments at 2; *see* Pet. at 15. Further, citing to numerous permits that do not contain flow limits, the City argued that flow limits are not necessary because "it is clear that an NPDES permit can legally and technically be issued *without flow limits*." Lowell Comments at 2-3; *accord* Pet. at 15. As to the counterproductive nature of flow limits, the City claimed that flow limits are inconsistent with the CSO Policy that requires wastewater treatment plants to "*maximize flow* * * * through the treatment facility." Lowell Comments at 3; *accord* Pet. at 15-16. During wet weather, the City prefers to direct combined stormwater and sewage to its treatment facility as long as it can provide at least primary treatment to what it receives, rather than discharging such flow directly to the Merrimack River through combined sewer overflow outfalls as soon as flow to the treatment plant exceeds a rate of 32 million gallons per day. Lowell Comments at 3; *see* Pet. at 16; Reply of Petitioner 10 (Dec. 23, 2019) ("Reply Br.") (arguing that maximizing flow through the treatment facility "reduces untreated sewer overflows" and "some treatment is always better than no treatment"). As the City put it: "Why would we ever impose a restriction on how much flow we can take through the treatment facility?" Lowell Comments at 3; *see* Pet. at 16.

The Region responded to the "necessity" argument in its Response to Comments by first explaining, as described above, the useful purpose a flow limit provides in assuring that the Region's reasonable potential determinations and pollutant effluent limits assure compliance with Massachusetts water quality standards. RTC at 17-18. The Region emphasized that the flow limit is needed "in order to assure that Lowell operates its facility to comply with its permit's technology- and water quality-based effluent limits." *Id*. at 17. Further, the Region responded to the City's citation of permits containing no flow limits by citing numerous permits issued in Region 1 and elsewhere in the United States that do contain such limits. *Id*. at 17, 19. Finally, the Region argued that a flow limit tied to design capacity was neither counterproductive nor inconsistent with the CSO Policy because the Policy's direction to "maximize flow" was tempered by the admonition that "'particular attention [must be paid] to regulatory considerations as well as treatment and capacity considerations.'" *Id*. at 18-19 (quoting CSO Policy at 5-2).

In its reply brief, the City adds a new twist to its argument that the permit's existing pollutant effluent limits make a flow limit unnecessary, asserting that the Lowell treatment facility's flow rate is pointless given that the permit's "relevant pollutant-specific [effluent] limits are * * * expressed in terms of both mass and concentration." Reply Br. at 9. Mass limits, the City explains, provide an absolute

maximum on pollutant discharge regardless of flow volume, unlike concentration limits. *Id*. Thus, the City argues that even if flow volume from its facility doubles, the permit's existing mass limits would continue to bar discharge of the pollutant amount (mass) associated with violation of the Massachusetts water quality standards. *Id*. The Region, in a surreply brief, contends that the City's argument concerning mass-based effluent limits should be denied because it was not raised in the public comments. The Region further notes that the substance of the City's argument is flawed because several of the permit's effluent limits were written in terms of pollutant concentration only. Respondent EPA's Surreply 8 (Jan. 10, 2020) ("Surreply Br.").

The City fails to establish clear error by the Region. The Region's explanation of why flow limits preserve the integrity of reasonable potential and effluent limit determinations is both logical and unrebutted by the City. *See* Part V.A.1.a(i) (explaining that by failing to rebut permit issuer's response to comments, petitioner leaves record supporting the permit issuer's decision). The City's claim that the permit's inclusion of mass-based effluent limits in addition to concentration-based limits makes flow limits unnecessary both comes too late[24] and

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[24] This argument was not included in the City's public comments and thus not preserved for review. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.(i), above (citing case). The City's comment stated only that a flow limit "is completely unnecessary to protect public health or the environment" because "[t]he concentration[-] and/or mass[-based pollutant effluent] limits do that." Lowell Comments at 2. No further explanation was provided as to the basis for this conclusion. The Region was not obligated to speculate about arguments that might underlie this brief conclusory assertion. Permit issuers "are not expected to be prescient in their understanding of vague or imprecise comments;" rather, comments "'must present issues with sufficient specificity to apprise the permit issuing authority of the issues being raised.'" *In re Sutter Power Plant,* 8 E.A.D. 680, 694 (EAB 1999) (quoting *In re Rockgen Energy Ctr.,* 8 E.A.D. 536, 547-48 (EAB 1999). The City's specific argument about mass-based limits was also not included in its petition and new arguments may not be raised in reply briefs. *See* 40 C.F.R. § 124.19(c)(2); *see also* note 22**,** above (citing cases). The City also raises two other contentions in its reply brief that have not been previously presented, either in public comments or in its petition: (1) flow limits are unnecessary because in wet weather events with high flow the concentration of pollutants is diluted; and (2) the "unstated understanding" in the 2010 administrative order, which suspended the existing flow limits in favor of reporting, was that a reissued permit would not contain flow limits in favor of provisions requiring compliance with the City's long-term control plan. Reply Br. at 8-9. The City, however, cites nothing in the administrative record to support these claims and they otherwise run afoul of the limitation either on raising arguments not included in the public comments or,

is inaccurate. Three effluent limits (for chlorine, phosphorus, and *E. coli*) are concentration-based only, containing no mass limitations. 2019 Permit pt. I.A.1. As to the parties' arguments based on permits that either do or do not contain flow limits, the Board has previously held that "a disparity in requirements imposed on [publicly owned treatment works]" is "legally irrelevant" to a permit challenge because "permits are issued on an individual basis, taking into account individual differences where appropriate." *In re City of Port St. Joe*, 7 E.A.D. 275, 304 n.44 (EAB 1997). And the City has not provided sufficient information on the other permits alluded to or cited to carry its burden of showing that those permit determinations bear on the Region's decisions on the City's permit. As to the City's claim that the flow limit is inconsistent with the CSO Policy, the City never addresses the fact that the Policy tempered its instruction to maximize flow through the treatment facility by mandating consideration of regulatory and capacity issues. Nor does the City explain how increasing flow to the facility above its capacity is possible without infringing the regulatory bar on the bypass of treatment. Thus, the City's arguments that the restriction on flow is unnecessary and counterproductive do not demonstrate that the Region clearly erred in including such a limitation.

3. E. Coli *Daily Effluent Limit*

a. *Objections to* E. Coli *Daily Maximum Limit Raised in the Petition*

In its petition, the City objects to the inclusion in the permit of a daily limit on *E. coli* discharges, raising three separate arguments. The City first argues that the daily limit chosen by the Region is not needed because the permit's monthly *E. coli* limit, which is based on the geometric mean of a compilation of *E. coli* data, is protective of the daily value, which is based on the "statistical threshold value" of those data. Pet. at 19. To support this assertion, the City cites to EPA guidance on bacterial water quality criteria that computes the geometric mean and statistical threshold values relied upon by the Region. *Id*. at 19 n.6. Second, the City seeks more flexibility in the strictness of the application of the daily limit to address wet weather events, proposing several different ways to modify the daily limit. *Id*. at 20-21. Third, the City argues that the Region violated 40 C.F.R. § 122.45(d), which prescribes that effluent limits for publicly owned treatment works be set in terms of average weekly and monthly discharge limitations "unless impracticable."

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for arguments preserved for review, raising new arguments in reply briefs. *See* 40 C.F.R. § 124.19(a)(4)(ii), (c)(2); *see also* Part V.A.1.a(i) and note 22, above.

According to the City, "EPA cannot (and does not even attempt to) make the impracticability showing that is own regulations require." *Id*. at 20.

Because the Region argues that there are significant procedural difficulties concerning whether these arguments are properly before the Board, Oral Arg. Tr. at 60, the City's comments on the *E. coli* maximum daily limit and the Region's response to those comments are discussed in detail below. But first, some background information on water quality criteria for fecal coliform bacteria is presented so that the City's arguments—especially the one involving the geometric mean and statistical threshold value—can be placed in context.

b. *Background on Water Quality Criteria for Bacteria*

The bacteria *Enterococci* and *E. coli* are used as indicators in regulating fecal contamination of water bodies, which can cause gastrointestinal illness. Office of Water, U.S. EPA, EPA Doc. No. 440/5-86-001, *Ambient Water Quality for Bacteria – 1986*, at 9 (Jan. 1986) (A.R. K.10) ("1986 Water Quality Criteria for Bacteria"). EPA has long recommended that criteria using indicator bacteria should contain both a criterion based on an average monthly value and a criterion using a high-end value for shorter time periods. EPA's 1986 guidance document entitled "Ambient Water Quality for Bacteria" incorporated this approach, advising the use of criteria with a steady-state geometric mean as well as "an unacceptably high value for any single bacteria sample." *Id*. According to the guidance, maximum single sample values should be established at a higher level than the geometric mean "to avoid unnecessary beach closings based on single samples," but nonetheless at a stringent enough value to meet the desired confidence level that fluctuations in single sample measurements do not indicate that water quality is not protective of designated uses. *Id*.

When using *E. coli* as an indicator, the 1986 guidance recommended using the following criteria: a steady-state geometric mean of 126 cfu/100 mL and four single sample maximum values depending on level of water use—235 cfu/100 mL (75th percentile confidence level) for designated beach areas, 298 cfu/100 mL (82th percentile) for moderately used areas, 406 cfu/100 mL (90th percentile) for lightly used areas, and 576 cfu/100 mL for infrequently used areas.[25] *Id*. at 15 tbl.4. Later

[25] Although it may at first appear counterintuitive that the lower confidence levels are used for areas with the greatest amount of full body contact recreation, EPA explained:

> [T]he lowest confidence level corresponds to the highest level of protection because it leads to a more precautionary judgment to treat the waterbody as exceeding the mean criterion, even though there is less

EPA guidance from 2012 further addressed recreational water criteria, explaining that "[t]ogether, the 1986 criteria [geometric mean] and [single sample maximum] described a water quality distribution that would be protective of primary contact recreation, based on the epidemiological studies conducted during that period."[26] Office of Water, U.S. EPA, EPA Doc. No. 820-F-12-058, *Recreational Water Criteria* § 3.6.1, at 39 (Dec. 2012) ("2012 Recreational Water Criteria").[27]

The 2012 Recreational Water Criteria guidance continued to use the same two-criteria approach, although EPA adopted the term "statistical threshold value" instead of single sample maximum for setting high-end criterion values. Further, EPA recommended the use of a single statistical threshold value of "the 90th percentile of the water quality distribution to take into account the expected variability in water quality measurements," instead of the different single sample maximums depending on the level of recreational use of the water body in the 1986 guidance. *Id*. § 3.6.2, at 40. EPA explained its reasoning for retaining both the use of a geometric mean and a maximum value (i.e., the statistical threshold value), noting that "[u]sing the [geometric mean] alone would not reflect spikes in water quality because the [geometric mean] alone is not sensitive to them." *Id*. § 3.6.2, at 39. The 2012 guidance's recommended criteria values are a monthly geometric mean of 126 cfu/100 mL and a statistical threshold value at 90th percentile of 410 cfu/100 mL. *Id*.§ 1.2, at 6 tbl.1.

> statistical confidence that this is the case. EPA assigned the lowest single sample maximum to designated bathing beach areas because a high degree of caution should be used to evaluate the status of such areas * * *.

Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67,219, 67,221 (Nov. 16, 2004).

[26] EPA has explained that the 1986 criteria values for both the geometric mean and single sample maximum are "derived * * * from beach water quality datasets that were collected as part of EPA's epidemiological studies conducted during the late 1970s and early 1980s." Office of Water, U.S. EPA, *Recreational Water Quality Criteria*, Doc. No. 820-F-12-058 § 3.6.1, at 38-39 (2012). The single sample maximum values, according to EPA, "were derived from upper percentiles of the water quality distribution around the [geometric mean] criteria values." *Id*. § 3.6.1, at 39.

c. *The City's Public Comments on the* E. Coli *Daily Limit*

The City's initial objection in its public comments was that "the daily maximum limit [for *E. coli*] should be deleted because it is based on EPA's criteria Statistical Threshold Value (STV) (410 colonies per 100 mL), which is derived from the same statistical distribution as the geometric mean-based average value." Lowell Comments at 5. The City's petition repeats that comment almost verbatim, but also cites to the 2012 Recreational Water Criteria guidance for support. Pet. at 19-20 & n.6.

The bulk of the City's *E. coli* comments were devoted to proposing more "flexible" options for regulating short-term spikes in *E. coli* values. Lowell Comments at 5-6. The City argued that a more flexible approach is appropriate given that some states provide "compliance flexibility" with daily *E. coli* limits and several other states impose no daily limits at all, instead using only limits based on weekly and monthly averages or even monthly averages alone. Citing to an approach used by West Virginia, the City suggested that it be "allowed to exceed the daily maximum permit limit one percent of the number of annual samples that we take." *Id*. at 5. Another proposal by the City was that the permit contain "a higher bacteria limit when [the] treatment facility flows exceed our 32 [million gallons per day] design capacity." *Id*. at 6.

The City's comments do not explicitly mention the argument in its petition that the *E. coli* daily limit violates section 122.45(d)(2) due to the lack of an impracticability finding. However, the City now claims that its *E. coli* comments cross-referenced a separate comment that did raise this issue. Oral Arg. Tr. at 19. That comment challenged daily effluent limits other than the *E. coli* limit, arguing that these other limits "are legally inconsistent with EPA's regulations, which require monthly and weekly average limits, unless impracticable [*40 CFR § 122.45(d)(2)*]." Lowell Comments at 4.

d. *The Region's Response to the City's* E. Coli *Comments*

In the Response to Comments, the Region stated that in setting the *E. coli* daily limit it "opted for a protective approach that is consistent with the Commonwealth's interpretation and application of its water quality standards."[28] RTC at 22. The Region explained that in 2007 Massachusetts had adopted in its

[28] The Fact Sheet on the proposed permit also had referenced the Massachusetts water quality criteria for bacteria as the basis for the permit's *E. coli* limit. Fact Sheet at 19 n.6.

water quality criteria the approach to fecal bacteria discharges recommended by EPA's 1986 Ambient Water Quality for Bacteria guidance. *Id*. As noted above, that recommended approach involves setting limits on both the geometric mean of bacteria counts as well as a single sample maximum value, which protects against short-term fluctuations in bacteria counts. 1986 Water Quality Criteria for Bacteria at 9. Specifically, the Massachusetts water quality criterion provides that for Class B waters other than bathing beaches, "the geometric mean of all E. coli samples taken within the most recent six months shall not exceed 126 colonies per 100 [mL] typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 [mL]." 40 Mass. Code Regs. § 405(3)(b)(4)(b). The Region noted that Massachusetts guidance has implemented the Class B bacteria criteria by applying the single sample maximum value at the statistical 90th percentile threshold value (409 cfu/100 mL), which is consistent with EPA guidance giving states discretion on how to use the 1986 single sample maximum values in their Clean Water Act programs. RTC at 22-23; *see* Mass. Dep't of Envtl. Prot., *Guidance on Implementation of Proposed Primary Contact Recreation Bacteria Criteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00*, at 7, 11 tbl.2, 12 (draft June 25, 2007) (A.R. L.4); Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67,219, 67,225-26 (Nov. 16, 2004) (discussing flexibility states have in choosing a single sample maximum value). Because the Region concluded that "the 90th percentile single sample maximum recommended value is protective of human health while accounting for the comparatively lower recreational use in the immediate vicinity of wastewater treatment plant outfalls," RTC at 23, the Region used that value—409 cfu/100 mL—as the daily maximum limit in the City's permit. 2019 Permit pt. I.A.1.

Additionally, the Region's Response to Comments rejected the City's request for flexibility on the daily maximum *E. coli* effluent limit. This flexibility request was interpreted by the Region as proposing that the permit not apply the daily maximum as an end-of-the pipe limit but instead after dilution of discharged bacteria in a mixing zone in the Merrimack River. RTC at 23. The Region rejected this proposal as inconsistent with Massachusetts water quality regulation on mixing zones. The Region explained that the relevant Massachusetts regulation barred mixing zones if they interfere with the existing or designated use of surface waters. *Id*.; *see* 314 Mass. Code Regs. § 4.03(2). For the Lowell treatment facility, the Region concluded that a discharge that exceeded Massachusetts' *E. coli* criteria would interfere with the Merrimack River's designation for primary and secondary contact recreation. RTC at 23-24.

The Region did not address, in the Response to Comments, the applicability of section 122.45(d)(2) to the *E. coli* daily limit or the question of whether it made

an impracticability finding. In both its response brief and surreply brief, the Region maintains that the City failed to raise this objection to the *E. coli* daily limit during the public comment period. Respondent EPA Region 1's Response to the Petition for Review 36 (Dec. 10, 2019) ("Resp. Br."); Surreply Br. at 9-10.[29]

e. *Analysis of the City's Arguments*

Most of the City's challenges to the *E. coli* daily limit do not comply with the regulatory requirement that a petitioner must, for issues raised in a public comment and addressed in the permit issuer's response to comments, "explain why" the permit issuer's response "was clearly erroneous." *See* 40 C.F.R. § 124.19(a)(4)(ii). The City's remaining claim regarding section 122.45(d) fails because the City did not raise that contention as to the *E. coli* daily limit with sufficient specificity in its public comments to preserve it for review.

First, as to the statistical threshold value question, the City's petition just repeats verbatim its technical claim that a daily maximum value based on the statistical threshold value is unnecessary because the geometric mean is sufficient. *Compare* Lowell Comments at 5, *with* Pet. at 19-20. Mere reiteration of public comments does not satisfy the requirement that a petitioner explain why the Region's response to that comment is erroneous. *See* 40 C.F.R. § 124.19(a)(4)(ii); *see, e.g.*, *In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 5 (EAB 2000); *In re Hadson Power 14-Buena Vista*, 4 E.A.D. 258, 294-95 (EAB 1992). Importantly, the City never mentions the Massachusetts water quality criterion that the Region relied upon in setting the daily maximum level or discusses the EPA and Massachusetts policies on which the water quality criterion is based and which explain why, as a technical matter, both a geometric mean and a high-end value, such as the statistical threshold value, are needed to protect the public.[30]

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[29] The City did not respond to this assertion prior to being questioned at oral argument about whether the issue had been presented in a public comment. Oral Arg. Tr. at 32.

[30] In its reply brief and at oral argument, the City does address the Massachusetts water quality criteria for bacteria. In its reply brief, the City claims that "[a]lthough the standard states that no single sample shall exceed the [statistical threshold value] number, it does not require daily limits." Reply Br. at 12. The City offers no explanation for why it interprets the criteria in this fashion. At oral argument, the City raised another new argument about the Massachusetts water quality criteria, asserting that because the Region set the daily maximum limit at 409 cfu/mL rather than 235 cfu/mL, as specified in the criteria, that the Region had the discretion to treat the single sample maximum

Rather than addressing the Region's primary reason for including a daily maximum limit for *E. coli*—i.e., the Massachusetts water quality criteria and related interpretive policies—the City instead seizes on the Region's statement that it followed a "protective approach" to regulating bacteria and argues that relying on a "protective approach" provides "no meaningful basis * * * for the daily maximum limit" and "would effectively justify any conceivable limit [the Region] devised irrespective of rationality." Pet. at 22. This argument fundamentally misstates the basis for the Region's inclusion of a daily maximum *E. coli* limit. Moreover, the argument does not rebut EPA's consistent position for over thirty years that because of variability in the database on the association of *E. coli* levels with gastrointestinal illness, *E. coli* criteria should include both a monthly geometric mean and a high-end value. In fact, the only technical basis the City cites for its claim that the monthly average limit makes the daily limit unnecessary is EPA guidance concluding that the monthly limit alone is insufficient. *See id.* at 19 n.6 (citing 2012 Recreational Water Quality Criteria at 39). Thus, the City's repetition of its statistical threshold value claim and its criticism of the Region's protective approach to *E. coli* do not meaningfully confront the response to comments and "leave[] us with a record that supports the Region's approach." *In re Westborough*, 10 E.A.D. 297, 311 (EAB 2002).

Second, the City's arguments in favor of a more flexible approach to the *E. coli* daily limit similarly do not explain why the Region clearly erred in following Massachusetts law and policy. In its petition, the City advocates for a flexible approach by citing approaches to daily limits taken in West Virginia and Missouri. The City also argues for adoption of a mixing zone given that the amount of dilution provided by the Merrimack River means that Lowell's discharge would meet the *E. coli* effluent limit "at the edge of the mixing zone." Pet. at 20-21. None of this is relevant to the Region's discussion in the Response to Comments of the City's objection to the permit's daily maximum limit on *E. coli*. The Region was applying Massachusetts law, not West Virginia or Missouri law. Also, the question was not whether the City could meet the daily maximum limits at the edge of a mixing zone,

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requirement as a weekly average and use a numerical value appropriate for that time period. Oral Arg. Tr. at 29-31. The City does not address the Region's explanation in the Response to Comments that the choice of 409 cfu/mL level was based on Massachusetts and EPA policies bearing on implementation of the criteria. RTC at 23. These arguments come too late. *See* 40 C.F.R. § 124.19(a)(4)(ii); *see also* Part V.A.1.a(i), above. Moreover, the Board will not consider arguments raised for the first time in a reply brief or at oral argument. *See* 40 C.F.R. § 124.19(c)(2) (barring inclusion of new issues or arguments in reply briefs); *see also* Part V.A.1.a(i) (citing case) and note 22, above.

but whether Massachusetts law allowed establishment of a mixing zone for the Lowell treatment facility's bacteria discharge *in the first instance.* Accordingly, the City's argument for a more flexible *E. coli* limit also fails to respond to the Region's Response to Comments and thus is denied for noncompliance with petition requirements. *See* 40 C.F.R. § 124.19(a)(4)(ii); *see also* Part V.A.1.a(i), above (citing cases).

Finally, the City's argument that the *E. coli* effluent limit violates the requirement in 40 C.F.R. § 122.45(d) that effluent limits for publicly owned treatment works be set in terms of average weekly and monthly discharge limitations unless such limits are "impracticable" was not made with sufficient specificity as to the *E. coli* limit in public comments to preserve it for Board review. An issue is only preserved for Board review if the petitioner can demonstrate that the issue has been "specifically raised during the public comment period." *In re Maui Elec. Co.*, 8 E.A.D. 1, 9 (EAB 2001). The Region is not required to "guess the meaning behind imprecise comments," *Westborough*, 10 E.A.D. at 304, or address comments that are at best "elliptical." *In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 723 (EAB 2006). A cross-reference in a comment generally does not provide the required specificity unless it includes an explanation of how the referenced material supports the position taken in the comment. *In re City of Attleboro*, 14 E.A.D. 398, 443 (EAB 2009) (holding that comment that "the phosphorus limits are arbitrary and capricious because they rely upon the same errors [the same assumptions regarding dilution, modeling and scientific support] as the nitrogen limits" lacked sufficient specificity to preserve the issue for review because it "fail[ed] to explain how the alleged errors the Region made with respect to nitrogen relate to the determination of the phosphorus limit") (citation omitted).

The City did clearly contend in its comments that the carbonaceous biochemical oxygen demand ("CBOD") and total suspended solids ("TSS") daily maximum limits were inconsistent with section 122.45(d) due to the lack of an "impracticability" finding.[31] Lowell Comments at 4. And the City's comment on the *E. coli* maximum daily limit does cross-reference the CBOD/TSS comment. *Id.* at 5. However, the City's cross-reference cannot be reasonably read as invoking the "impracticability" argument as to the *E. coli* daily limit.

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[31] The Region appears not to have found it necessary to address the City's comment on § 122.45(d)(2) that was posed as to these effluent limits because, in responding to that comment, the Region agreed to modify the effluent limits as proposed by the City for reasons unrelated to § 122.45(d). RTC at 20.

In its *E. coli* daily limit comment, the City wrote that "for the same reasons noted above for the daily maximum limits for CBOD and TSS, we urge EPA to provide some flexibility with the daily maximum E. coli limit." *Id*. As an example of the type of flexibility it sought for the *E. coli* daily limit, the City proposed that it be "allowed to exceed the daily maximum permit limit one percent of the number of annual samples that we take." *Id*. at 6. While the City's CBOD/TSS comments contain several arguments that could be construed as considerations bearing on whether a permitting authority should exercise flexibility as to how rigorously daily limits are applied,[32] the City's claim that CBOD/TSS daily limits violate section 122.45(d)(2) is not a request for flexible application of the limits. Rather, it is a demand that the limits be removed from the permit. *See* Reply Br. at 12 (arguing that the Region's "failure to follow [122.45(d)] without an impracticability showing is [a] clear error of law"). Thus, the City's brief explanation for the cross-reference—the CBOD/TSS comments support its request for flexibility—if anything, directs the Region away from any legal argument concerning section 122.45(d) in the CBOD/TSS comments. The City has therefore not met its burden of showing it raised the issue of section 122.45(d) compliance as to the *E. coli* daily limit with sufficient specificity in its comments. The issue has not been preserved for review.

In any event, the Region has a statutory and regulatory obligation to ensure that permit effluent limits meet more stringent state water quality standards such as Massachusetts' imposition of single sample maximum or daily limit on bacteria discharges. Section 301(b)(1)(C) of the Clean Water Act directs that "not later than July 1, 1977, any more stringent limitation, including those necessary to meet water quality standards * * * established pursuant to any State law or regulations" be achieved. CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C). Reinforcing that statutory requirement, 40 C.F.R. § 122.44 directs permitting authorities that each NPDES permit "shall include * * * any requirements * * * necessary to * * * [a]chieve water quality standards." 40 C.F.R. § 122.44(d)(1). The federal regulatory requirement in section 122.45(d) imposing an impracticability finding as a prerequisite to deviating from averaging periods for limits on discharges by publicly owned treatment works does not overrule these statutory and regulatory

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[32] More specifically, the City asserted that (1) daily limits should not be imposed because they were generally not required by most other states or by Region 1 in two recent permits; (2) daily limits are "counterproductive environmentally" because they are a "de facto limit on how much peak wet weather flow" can be sent to the Lowell treatment facility and thus result in increased CSOs; and (3) daily limits conflict with other permit requirements, such as the requirement to maximize treatment. Lowell Comments at 4.

commands regarding more stringent state standards, and the City has not tendered any argument as to why they should.

Accordingly, the City's arguments on the *E. coli* effluent limits are denied.

B. *The City's Long-Term Control Plan and the 2019 Permit*

The City argues that the Region was required by the CSO Policy to address in the City's NPDES permit the development and implementation of the City's long-term control plan for combined sewer overflows. Pet. at 25-26 (citing Combined Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688 (Apr. 19, 1994)). According to the City, "the CSO Policy (which specifies Phase 1 and 2 CSO permit provisions) * * * support[s] the clear need for such provisions." *Id*. at 25. In response, the Region points to language in the CSO Policy that it maintains provides the Region with the flexibility of including these requirements in the permit or in an enforcement order and that the Region, to date, has chosen the enforcement order option for the City's long-term control plan. Resp. Br. at 44; Oral Arg. Tr. at 56.

The CSO Policy requires that combined sewer systems develop and implement long-term control plans for combined sewer overflows that "will ultimately result in compliance with the requirements of the [Clean Water Act]." 59 Fed. Reg. at 18,691. The CSO Policy describes how the long-term control plan requirement can be implemented through phases in the NPDES permitting process. *See id*. at 18,695-96; Office of Water, U.S. EPA, EPA Doc. No. 832-B-95-008, *Combined Sewer Overflows: Guidance for Permit Writers* § 2.1, at 2-2 (Sept. 1995) (A.R. H.19) ("CSO Guidance for Permit Writers"). Under this phased approach, a "Phase I" permit will require that the permittee "develop and submit" a long-term control plan and a "Phase II" permit will "insure that the selected CSO controls are implemented, operated, and maintained as described in the long-term CSO control plan." 59 Fed. Reg. at 18,696. However, the CSO Policy also gives permitting authorities the option of requiring development and submittal of long-term control plans through a Clean Water Act section 308 information request *or* enforcement action. *Id*. at 18,691. With respect to implementation of the plan, the Policy states that once the plan is completed and the permitting authority has approved the controls necessary to meet the requirements of the Clean Water Act, "the permitting authority should include[,] in an appropriate enforceable mechanism, requirements for implementation of the long-term CSO control plan." *Id*. at 18,695.

Here, the Region chose the enforcement route for the development and submission of the long-term control plan, issuing administrative orders to the City

in 2010 and 2017 to that effect. A long-term control plan submitted by the City in response to the 2010 administrative order was rejected by both the Region and Massachusetts DEP as inconsistent with the basic requirements of the CSO Policy. EPA LTCP Comments Letter at 1; MassDEP LTCP Comments Letter at 2. The 2017 administrative order mandated that the City submit a revised plan by December 31, 2019. Region 1, U.S. EPA, *Administrative Order on Consent, Docket No. CWA-AO-R01-FY17-16*, at 6-7 (Sept. 29, 2017) (A.R. H.9). At the time the petition was filed, the City was still developing its long-term control plan as part of its integrated plan.[33] Subsequently, the City's integrated plan, including its long-term control plan, was submitted on the December 31, 2019 due date and as of February 2020 the plan is under review by the Region. *See* Oral Arg. Tr. at 53; *see also* Pet. at 25.

The City's challenge to the absence of a provision in the 2019 permit addressing the long-term control plan has expanded over the course of the permitting process. In its comments on the draft permit, the City identified the draft permit as being in the Phase I stage and asserted that the permit was inconsistent with the CSO Policy only because that "Policy requires that a deadline for submittal of our CSO [long-term control plan] update be included in the permit." Lowell Comments at 11. The City also requested an "opportunity to discuss the appropriate deadline with EPA." *Id.*

In its petition, however, the City expanded its challenge, arguing that the permit should not only have a deadline for submission of the long-term control plan but should also address "implementation" of the plan. Pet. at 25. In its reply brief, the City elaborated that its permit should include the Phase II permit requirement of "'[n]arrative requirements which ensure that the selected CSO controls are implemented, operated and maintained as described in the long-term CSO control plan.'" Reply Br. at 15 (quoting CSO Policy, 59 Fed. Reg. at 18,696). The City further maintained that the permit "should have a compliance schedule—which mirrors the [long-term control plan] implementation period—to achieve water quality standards." *Id.* However, because the City did not raise its objection

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[33] In 2019, the Water Infrastructure and Improvement Act, Pub. L. No. 115-436, 132 Stat. 5558 (2019), codified EPA's Integrated Municipal Stormwater and Wastewater Planning Approach Framework into § 402(s) of the Clean Water Act, 33 U.S.C. § 1342(s). The integrated planning process provides a comprehensive path for municipalities to meet Clean Water Act requirements.

concerning the need for an implementation schedule and a compliance schedule mirroring the implementation period during the public comment period, that challenge to the permit has not been preserved for review. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.a(i), above (citing case). In any event, we note that these types of requirements are only mandated for a Phase II permit, and a Phase II permit only becomes appropriate "[o]nce the permittee has completed development of the long-term CSO control plan and the selection of the controls necessary to meet [Clean Water Act] requirements has been coordinated with the permitting and [water quality standard] authorities."[34] 59 Fed. Reg. at 18,696.

The only question that remains is whether the Region has the flexibility under the CSO Policy to omit from the City's permit a requirement to develop and submit a long-term control plan if the Region has previously required that such a plan be submitted pursuant to an enforcement order. In other words, does the requirement that the City develop and submit a long-term control plan need to be in the permit despite its earlier inclusion in an enforcement order? Given that the City has now developed *and* submitted its updated long-term control plan, that question has become an academic one. Back in July 2019 when it submitted its public comments, the City did have a reason for requesting to meet with the Region to discuss "the appropriate deadline" for the long-term control plan because the plan had not yet been submitted. But the City's reason for wishing to discuss the deadline with the Region no longer exists. The matter is moot. *See In re W. Suburban Recycling & Energy Ctr., L.P.*, 8 E.A.D. 192, 197 (EAB 1999) (holding permit challenge moot because permittee had transferred ownership of property where permitted facility was to be constructed).

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[34] The City erroneously cited *In re District of Columbia Water and Sewer Authority*, 13 E.A.D. 714 (EAB 2008), for the proposition that "EPA must address the development *and* implementation of its LTCP in the [the City's] permit." Pet. at 25 (emphasis added). First, the *D.C. Water* case involved a compliance schedule only "for implementation of the selected controls in the [long-term control plan]." *D.C. Water*, 13 E.A.D. at 728. Second, the Board held that although the CSO Policy did *not* require the Region to include a compliance schedule for implementation of the long-term control plan in the District of Columbia's NPDES permit, District of Columbia law did require the inclusion of such a compliance schedule. *Id*. at 736-37. Thus, *D.C. Water* did not address compliance schedules for development of long-term control plans and only required inclusion of a compliance schedule for implementation of a long-term control plan based on state law not applicable here.

C. *Prohibition on Bypass of Treatment*

The City's 2019 permit prohibits "bypass," which it defines as "intentional diversion of waste streams from any portion of a treatment facility." 2019 Permit pt. II.B.4.a(1). At the same time, this permit provision provides that bypass may be approved by the permitting authority on either a case-by-case basis or prospectively if certain enumerated conditions are met. *Id*. pt. II.B.4.d. This permit language is taken verbatim from EPA's NPDES regulation at 40 C.F.R. § 122.41(m).

In its comments, the City objected to the prohibition on bypass, arguing that it "has a secondary bypass [approach that] allows [it] to treat significant peak wet weather flows as part of [its] efforts to maximize flows at the treatment plant." Lowell Comments at 8; *see* Pet. at 26. Additionally, the City argues that the Region should have included the City's high flow management plan, which includes secondary bypass provisions, in the permit. Lowell Comments at 8; *see* Pet. at 26-27.

In the Response to Comments, the Region stated that the City had not fulfilled the requirements necessary for the Region to prospectively authorize secondary bypass in the permit. The Region referenced the extensive discussion of this issue in section 7 of the CSO Policy and highlighted the Policy's explanation of how a permittee could meet the requirements of 40 C.F.R. § 122.41(m) for a bypass allowance by demonstrating there are "no feasible alternatives" to bypass.[35] RTC at 28 (quoting CSO Policy, 59 Fed. Reg. at 18,694). However, the Region noted that the City "has not submitted sufficient information or analysis directed to

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[35] Section 7 specifies that:

> [T]he feasible alternatives requirement of the [bypass] regulation can be met if the record shows that the secondary treatment system is properly operated and maintained, that the system has been designed to meet secondary limits for flows greater than the peak dry weather flow, plus an appropriate quantity of wet weather flow, and that it is either technically or financially infeasible to provide secondary treatment at the existing facilities for greater amounts of wet weather flow. The feasible alternative analysis should include, for example, consideration of enhanced primary treatment (e.g., chemical addition) and non-biological secondary treatment. Other bases supporting a finding of no feasible alternative may also be available on a case-by-case basis.

59 Fed. Reg. at 18,694.

satisfy these requirements for inclusion of CSO-related bypass conditions in the Permit for specific flows." *Id*. at 28-29. The Region acknowledged that the City had submitted a high flow management plan but explained that that plan could not be incorporated into the permit because it "does not itself satisfy the requirements for the approach outlined in Section 7 of the CSO Policy" for prospective approval of CSO bypasses. *Id*. at 29.

The City offers little in its Petition to show why the Region's response to the City's comments was in error. The City's main argument appears to be that the Region's explanation for not adopting the Plan "is appearance over substance" because "[f]or almost every other [combined sewer] system" EPA has authorized secondary bypass so that treatment flow could be maximized. Pet. at 27. The City claims that "hundreds" of NPDES permits have been granted to combined sewer systems allowing secondary bypass and cite the District of Columbia's permit as an example. *Id*. at 26.

These arguments are insufficient to demonstrate that the Region clearly erred in including the provision barring bypass of treatment. The City does not contest the Region's conclusion that the City has not made the showing required for a bypass allowance: i.e., that the City has no feasible alternative to bypass of treatment for peak flows.[36] Further, the City's unsubstantiated claim that EPA has approved a bypass provision in hundreds of instances is not persuasive. As noted above, disparate requirements in separate permits are "legally irrelevant" because permits "tak[e] into account individual differences where appropriate." *In re City of Port St. Joe*, 7 E.A.D. 275, 304 n.44 (EAB 1997). That is particularly the case in this instance given the City's failure to identify, with one exception, the hundreds of permits it was referencing. Further, the City's identification of one specific permit, the D.C. Water permit, is also unhelpful to the City given the individual nature of permit decisions and the City's failure to demonstrate that the circumstances in Lowell and the *D.C. Water* were so closely equivalent that it

[36] In its reply brief, the City claims for the first time that the Region "knows" that the City has no feasible alternative to using bypass and that the Region "never informed the City of the Region's desire for an alternative analysis." Reply Br. at 16-17. These arguments come too late. *See* 40 C.F.R. § 124.19(c)(2); *see also* note 22, above. In any event, not only does the CSO Policy emphasize that the permittee bears the burden of showing that there is no feasible alternative to bypass of treatment, 59 Fed. Reg. at 18,693, but the letters from both the Region and Massachusetts in 2016 rejecting the City's long-term control plan submission identified the failure of the plan to evaluate alternatives and the costs or feasibility of elimination of CSO discharges. EPA LTCP Comments Letter at 2; MassDEP LTCP Comments Letter at 2.

would have been arbitrary for the Region to have reached a result different than the one in the D.C. Water permit. *See* Region 3, U.S. EPA, *NPDES Permit No. DC0021199, D.C. Water & Sewer Auth.* (July 18, 2016), available at https://www.epa.gov/sites/production/files/2018-10/documents/blueplains_2018_final_permit.pdf ("D.C. Water Permit"). In fact, the Region notes that the D.C. Water permit contains the exact same regulatory language on bypass from 40 C.F.R. § 122.41(m), *see* D.C. Water Permit § II.B.2.d, and its prospective bypass allowance was granted due to the markedly different circumstances surrounding the D.C. Water facility. Resp. Br. at 46. On the latter point, the bypass allowance requires compliance with a schedule for implementation of requirements in a long-term control plan that is contained in a 2005 consent decree and 2016 amendments to that consent decree. *See* D.C. Water Permit § I.C.

Accordingly, because the City has not demonstrated that the Region clearly erred in including in the permit verbatim regulatory language prohibiting bypass, this claim is denied.[37]

D. *Provisions That Prohibit the City from Violating Water Quality Standards*

In addition to numeric effluent limits, the 2019 permit also specifies that the Lowell facility's discharge "shall not cause a violation of the water quality standards of the receiving water." 2019 Permit pt. I.A.2. Separately, the permit also provides that discharges from the City's combined sewer overflow outfalls

[37] As mentioned in Parts V.A.2 and V.A.3, above, a common theme in many of the City's challenges to the permit is that the permit does not provide the City with sufficient flexibility to manage wet weather flow to Lowell's treatment facility in the most sound environmental manner. *See* Pet. at 15-16 (flow effluent limit); *id*. at 20-21 (*E. coli* effluent limit); *id*. at 26-27 (bypass of treatment provision). This concern with the management of wet weather flows is perhaps best illustrated by the City's objection to the permit's bar on the bypass of treatment and its request that instead the Region should have eliminated that provision and included the City's high flow management plan in the permit. For reasons explained above, we have concluded that the Region did not clearly err in rejecting that approach. It should be noted, however, that the Region has expressed a willingness to discuss these issues in light of recent developments. Specifically, at oral argument, the Region stated that it was ready to meet with the City to discuss alternatives on bypass of treatment and indicated this "would be a reasonable conversation to have with [the City's] most recent submission [of the revised long-term control plan] at the end of this last year." Oral Arg. Tr. at 59. Nothing in this opinion precludes any such discussion.

"shall not cause or contribute to violations of federal or state Water Quality Standards."[38] *Id*. pt. I.F.2.b. The City objects to both prohibitions. Pet. at 27-32.

1. *Objections to the General Prohibition Against Violating Water Quality Standards*

The City argues that the Region lacks authority to include in the permit a provision generally prohibiting violation of water quality standards. Pet. at 27, 29, 30 (asserting that the permit is "legally incorrect," "no[t] authorized," and "not in accordance with the law"); *see* 2019 Permit pt. I.A.2. The City also asserts that the provision is unnecessary and is fundamentally unfair in that it undermines the Clean Water Act's permit shield provision and deprives the City of fair notice of its compliance obligations and due process. Pet. at 27-30. For the reasons below, we conclude that the City has failed to carry its burden of demonstrating that the Region clearly erred.

a. *The Region's Authority to Include a Prohibition Against Violating Water Quality Standards*

As the Region explained in the Response to Comments, section 402 of the Clean Water Act requires permit issuers to include—in every NPDES permit—conditions that ensure that the discharge will meet, among other things, the requirements of section 301. RTC at 32; *see* CWA § 402, 33 U.S.C. § 1342. Section 301(b)(1)(C) requires that any discharge must achieve "*any* more stringent limitation, including those necessary to meet water quality standards * * * established pursuant to any State law or regulations." 33 U.S.C. § 1311(b)(1)(C) (emphasis added); *see* RTC at 32 (cross-referenced from RTC at 40). The Region also noted that the regulations implementing the Clean Water Act similarly require that each permit include "'any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards * * * necessary to achieve water quality standards.'" RTC at 32 (quoting 40 C.F.R. § 122.44(d)(1)); *see also* 40 C.F.R. § 122.4(d) (prohibiting issuance of permit when the permit's conditions cannot assure compliance with applicable requirements of the Clean Water Act, which includes water quality standards).

In implementing the statutory requirements in sections 301 and 402, permitting authorities have frequently included in NPDES permits general

[38] Although the provisions challenged by the City *prohibit* the permittee from causing a violation of the water quality standards, the briefs often refer to this provision as a water quality standards "compliance" provision.

prohibitions such as the one contested here alongside more specific "end of pipe" pollutant-specific effluent limits. In responding to the City's comments on the draft permit, the Region explained "[t]he language included in Part I.A.2. is both lawful and consistent with EPA Region 1's past practice" and "is included in all Massachusetts NPDES permits." RTC at 32. Additionally, this language "was included in the City's previous 2005 NPDES Permit." *Id.* Other Regions and permitting authorities similarly include such language. *See, e.g., Ohio Valley Envtl. Coal. v. Fola Coal Co.*, 845 F.3d 133, 136 (4th Cir. 2017) (upholding enforcement of provision requiring the permittee's discharges to "'be of such quality so as not to cause violation of applicable water quality standards'") (quoting W. Va. Code R. § 14-30-5.1.f (2009)). The Fourth Circuit in *Fola Coal* recognized that EPA has often included such provisions in NPDES permits and noted that "EPA's view as to the reach of [narrative permit provisions prohibiting violations of water quality standards] has been consistent, as has the acceptance by courts of EPA's view when interpreting similar provisions. *Id.* at 141 & n.5 (citing several NPDES permits and relevant cases as examples). As the Region explained, including such permit conditions not only allows permit issuers to incorporate enforceable assurances into the permit that water quality standards will be met, but also provides permit authorities with a method to address, as necessary, water quality violations that a permittee causes due to unanticipated circumstances or changes to effluent quality. RTC at 33.

As also noted by the Region, the authority of permit issuers to include provisions stated generally in terms of water quality standards has been recognized by federal courts. *Id*. at 32-33. In *Northwest Environmental Advocates v. City of Portland*, the Ninth Circuit concluded that "the statutory language, legislative history, and case law authorize citizens to enforce [such] permit conditions." 56 F.3d 979, 990 (9th Cir. 1995). In analyzing a narrative provision similar to the one at issue here, the court relied on the U.S. Supreme Court determination in *PUD No. 1 of Jefferson County v. Washington Department of Ecology* that "the Clean Water Act allows States to enforce broad narrative water quality criteria contained in water quality standards." *Nw. Envtl. Advocates*, 56 F.3d at 987 (citing 511 U.S. 700, 716 (1994), which held that "the [Clean Water] Act permits enforcement of broad, narrative criteria based on, for example, 'aesthetics'"). As the Ninth Circuit explained, "the Supreme Court recognized that the numerical criteria components of state water quality standards cannot reasonably be expected to address all the water quality issues arising from every activity which can affect the State's * * * water bodies." *Nw. Envtl. Advocates*, 56 F.3d at 989-90 (citing *Jefferson Cty.*, 511 U.S. at 717). And the Ninth Circuit similarly recognized that including narrative water quality standards in permits allows permit writers to establish an "important enforcement tool" for situations not covered by an effluent limitation and as to

which a numeric effluent limit would be difficult to establish. *Id*. at 989. As an example, the Ninth Circuit pointed to combined sewer system overflows where, due to the variable and uncontrollable nature of such events, "it is impossible to determine the level at which to set a numeric concentration-based permit limit in order to ensure that the gross amount of pollution discharged will not violate water quality standards." *Id*.; *see also Fola Coal*, 845 F.3d at 139-143 (determining that permit condition prohibiting the permittee from causing violation of applicable water quality standards was an enforceable permit term and recognizing EPA's consistent use of such permit conditions); *NRDC v. Cty. of Los Angeles*, 725 F.3d 1194, 1199, 1201, 1205 (9th Cir. 2013) (addressing enforcement of permit that included provision that prohibited "discharges from [the facility] that cause or contribute to the violation of the Water Quality Standards or water quality objectives"), *cert. denied*, 572 U.S. 1100 (2014).

The City contends that *Jefferson County* is inapposite because it "did not address general compliance language" and instead "upheld a state certification dealing with minimum instream flows." Reply Br. at 19. It is true that the question presented in *Jefferson County* is distinguishable from the one at issue here, but the Supreme Court's analysis of the NPDES program and, in particular, the valid and appropriate inclusion of narrative criteria in permits is instructive and supportive to the issue in this case. *See, e.g.*, *Jefferson Cty.*, 511 U.S. at 715-16 (acknowledging that water quality criteria are often expressed in broad, narrative terms, such as "there shall be no discharge of toxic pollutants in toxic amounts," and upholding condition of state certification (under section 401) that directed permits to include minimum flow requirements to ensure compliance with water quality criteria even though those criteria were expressed in broad narrative terms rather than numeric values) (citations omitted).

The City contends that *Northwest Environmental Advocates* is inapposite because the court did not consider the legality of broad narrative prohibitions against violating water quality standards and was instead weighing a citizen group's ability to enforce such a prohibition. Reply Br. at 18. Notwithstanding the enforcement posture of the case, the Ninth Circuit's conclusions regarding a permitting authority's basis for including narrative prohibitions against violating water quality standards are instructive and strongly support the proposition that permitting authorities are authorized to include such provisions. *See Fola Coal*, 845 F.3d at 145-47.

In its petition, the City makes two arguments as to why the Region is not authorized to include the prohibition against violating water quality standards in the City's permit. First, citing to U.S. EPA Region 3's approval of a change to West

Virginia's NPDES program barring general permit provisions requiring compliance with West Virginia water quality standards, the City suggests that this action calls into question Region 1's authority to include a prohibition against violating water quality standards in the City's permit. Pet. at 28. Second, the City appears to claim that the Region has misconstrued its authority under Clean Water Act section 301. *Id*. at 29.

Region 3's approval of West Virginia's regulation prohibiting such provisions is not dispositive of this issue. West Virginia recently amended its statutory code and regulations to require that NPDES permits "contain conditions that are designed to meet all applicable state and federal water quality standards and effluent limitations," but also to prevent "wholesale" incorporation of water quality standards "either expressly or by reference as effluent standards or limitations in a permit." W. Va. Code § 22-11-8(a) (2015).[39] In doing so, the State sought and received the approval of EPA Region 3. *See* Letter from Cosmo Servidio, Reg'l Adm'r, Region 3, U.S. EPA, to Austin Caperton, Sec'y, W. Va. Dep't of Envtl. Prot. (Mar. 27, 2019); *see also id*. encl. 1 (document entitled "Decision Rationale – SB 357 and HB 2283") ("Region 3 Decision Rationale"); *id*. encl. 2 (document entitled "Response to Public Comment") ("Region 3 Resp. to Public Comment"). In approving this change to the West Virginia NPDES program, Region 3 stated two things:

> (1) "[N]othing in the [Clean Water Act] or its implementing regulations requires inclusion of * * * a narrative condition [generally requiring attainment of water quality standards];" and
>
> (2) [T]he NPDES program change did not "relieve[] [the West Virginia Department of Environmental Protection] of the obligation to include in NPDES permits, consistent with federal and state regulations, water quality-based effluent limitations and/or other terms and conditions necessary to ensure compliance with water quality standards."

Region 3 Decision Rationale at 4. Region 3 emphasized, however, that "nothing in federal law prohibits [the] inclusion of a narrative condition generally requiring attainment [or prohibiting violation] of water quality standards, and such conditions

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[39] In its reply brief, the City erroneously attributes the above-quoted statutory language to Region 3. Reply Br. at 19-20.

are frequently included in NPDES permits by EPA and the states."[40] Region 3 Resp. to Public Comment at 4. Thus, contrary to the City's argument, Region 3 specifically rejected the proposition that the Clean Water Act bars the incorporation of a general prohibition against violating water quality standards into a permit. Nothing in Region 3's approval suggests that such prohibitions are not authorized. The City seems to recognize this in its petition when it states correctly that "EPA concluded that such language is *not a requirement*," Pet. at 28 (emphasis added), which is not the same as making a determination that such provisions are contrary to law.

Additionally, and as Region 1 pointed out in its response to the City's comments, the "[c]hanges to the authorized NPDES program and state water quality standards in West Virginia have no bearing on the EPA's implementation of the NPDES program in Massachusetts." RTC at 34. The City has cited to no provision of state or federal law applicable here that is similar to the one in West Virginia. In sum, we find nothing in Region 3's approval of the change in West Virginia's NPDES program that limits Region 1's authority to include the prohibition against violating water quality standards in the City's permit.

We also reject the City's apparent argument that the Region lacks authority under Clean Water Act section 301 to include a general prohibition against the violation of state water quality standards in a permit. The City's contentions here are both vague and unclear. The City first notes that section 301 "authorizes the extensive 'reasonable potential' and other program elements that EPA uses to develop permits and to determine what specific limitations are necessary for the maintenance of water quality." Pet. at 29. From this, the City concludes that "the scope and results of the NPDES program" preclude the Region from establishing a "universal backstop"—i.e., a general prohibition against violating state water quality standards—as a tool for proving a permit violation in situations where the Region is "unable to prove a permittee's violation of such specific permit requirements." *Id*. The City seems to be contending that NPDES program elements adopted by EPA under section 301 constrain EPA's authority under that statutory provision. Yet, the City cites to no language in Clean Water Act section 301 or its implementing regulations to buttress its claim. Nor does the City offer any citation

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[40] In responding to public comments on the change to the West Virginia NPDES Program, Region 3 rejected claims that permit provisions generally requiring compliance with water quality standards violate due process or deprive permittees of fair notice of what amount of a pollutant they may discharge. Region 3 Resp. to Public Comment at 2-3.

or explanation as to how "the scope and results of the NPDES program" limit EPA's authority or, for that matter, identify the "other program elements" it is referencing. The Board "has often denied granting review of arguments that are vague and unsubstantiated," such as the City's argument here. *In re City of Moscow*, 10 E.A.D. 135, 172 (EAB 2001); *see In re New Eng. Plating Co.*, 9 E.A.D. 726, 737 (EAB 2001). In sum, the City's argument challenging the Region's authority under section 301 does not comply with the regulatory requirement that a petitioner "clearly set forth, with legal and factual support, [its] contentions for why the permit decision should be reviewed," 40 C.F.R. § 124.19(a)(4)(i), nor does it satisfy the City's burden on appeal of showing the Region clearly erred.

As such, the City fails to demonstrate that the Region lacked authority to include a general prohibition against violating water quality standards in the City's permit.

b. *The City's Objection to the Prohibition Against Violating Water Quality Standards as Unnecessary*

The City argues that the prohibition against violating water quality standards is unnecessary because other permit provisions "are more than broad enough to protect the general [water quality] standard." Pet. at 28; *see* Reply Br. at 19. As support, the City points to the permit requirements in parts I.A.3 through I.A.7 that track verbatim various general narrative prohibitions in the Massachusetts water quality criteria (e.g., do not discharge pollutants "that are toxic to humans, aquatic life or wildlife"). Pet. at 28; *see* Lowell Comments at 9; *compare* 2019 Permit pts. I.A.3–.7, *with* 314 Mass. Code Regs. § 4.05(3)(b)(5), (7), *and* 314 Mass. Code Regs. § 4.05(5)(a)-(b). According to the City, the general narrative provisions in parts I.A.3 through I.A.7 "are as readily and easily enforced by EPA as is the provision [prohibiting violation of water quality standards] challenged here." Pet. at 28. From this, the City concludes that the permit's prohibition against violating water quality standards "is improper." *Id*.

However, the City offers no explanation as to why the subset of Massachusetts water quality criteria contained in parts I.A.3 through I.A.7 are "broad enough" to render the prohibition against violating any Massachusetts water quality standard unnecessary. *See* Pet. at 28. Stating that these permit provisions "are as readily and easily enforced" as the prohibition against violating water quality standards does not address whether these permit provisions are "broad enough" to duplicate Massachusetts water quality standards. Thus, the City's argument here rests exclusively on its conclusory allegation that the referenced permit provisions are "broad enough," and a conclusory allegation is insufficient to

carry the City's burden to show that the Region clearly erred. *See In re Russell City Energy Ctr., L.L.C.*, 15 E.A.D. 1, 69 n.83, 74-75 (EAB 2010) (holding that "conclusory" assertions without explanation for their basis are "unpersuasive" and "conclusory assertions of error" without supporting information do not "cast[] doubt" on permitting agency's determination), *pet. for review denied sub nom. Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F. App'x 219 (9th Cir. 2012); *In re Broward Cty.*, 6 E.A.D. 535, 552 (EAB 1996) (holding that "a conclusory allegation to the contrary [of the Region's finding] provided no rational basis for the Region to reconsider its conclusion or alter the permit's conditions").

Moreover, the present case involves at least one water quality criterion—the nutrients criterion—that is not included in permit parts I.A.3 through I.A.7. And that criterion has relevance to the Lowell treatment facility's discharge above and beyond serving as the basis for the phosphorus effluent limit, because the treatment facility also discharges the nutrient nitrogen and the permit contains a reporting requirement but no effluent limit for that nutrient. 2019 Permit pt. I.A.1. The Region has made clear that the prohibition against violating state water quality standards is intended to provide a "safety net" for just such situations—to address "water quality standards violations * * * due to such circumstances as unanticipated changes in or alterations to effluent quality that might otherwise meet permit conditions." RTC at 33.

Accordingly, the City has not demonstrated that the prohibition against violating water quality standards is duplicative of other provisions in the permit and therefore unnecessary.

c. *Permit Shield, Fair Notice, and Due Process*

Finally, the City argues that the prohibition against violating water quality standards: (1) "deprives the City of its [Clean Water Act] Permit Shield, in that the City will never know what it can or can't discharge at any given time"; (2) "deprives the City of its right to fair notice or what it must do to comply"; and (3) denies the City of the "due process * * * right to know what limits EPA believes to be warranted and with which it must comply" and to comment on and appeal those compliance obligations. Pet. at 27-28; *see* Reply Br. at 19; Lowell Comments at 9. The fair notice issue—i.e., what is the City's compliance obligation—appears to be at the heart of each of these three arguments. Accordingly, we begin our analysis by focusing on that aspect of the City's challenge.

The Board considered a fair notice challenge to an underground injection well permit in *In re Puna Geothermal Venture*, 9 E.A.D. 243 (EAB 2000). In that case, the permittee argued that several permit conditions "are so vague as to deny

[the permittee] fair notice of what is required under the permit." *Id*. at 262. To address that contention, the Board closely examined the contested permit provisions to determine if they were "confusing," "ambiguous," or "unclear." *Id*. at 262-63.

Here, the City labels the prohibition against violating water quality standards as "vague" and the City contends that it "is concerned about * * * the generic, undefined, and unknowable scope of the activities prohibited by the provision." Pet. at 29. The City does not appear to be claiming that the permit language itself is unclear. That would be difficult. The language is an unambiguous requirement that the City's discharge not violate Massachusetts water quality standards. Rather, the City appears to be contending that it is the Massachusetts water quality standards that are "generic, undefined, and unknowable" and thus the City cannot know what "specific numeric or other determinations" under these standards apply to its facility. *See id.* at 28-29.

The Massachusetts water quality standards are state regulations appearing in the Massachusetts Administrative Code. *See* 314 Mass. Code Regs. §§ 4.01-.06. Yet, in neither its public comments on the draft permit nor in the petition filed with the Board has the City identified a single example of a Massachusetts water quality standard that it claims is vague or undefined, much less explained the source of such purported ambiguity. Conclusory claims, without citation to specific supporting information, do not fulfill the City's burden to show the Region clearly erred. *See* Part V.D.1.b, above

Only at oral argument did the City cite a specific Massachusetts water quality standard—the nutrients criterion—that it claims does not provide fair notice. When the City's attorney was asked whether it was appropriate for the permit to require compliance with the Massachusetts water quality standard for nutrients given that the Lowell treatment facility discharges the nutrient nitrogen but the permit does not contain a nitrogen effluent limit, he replied that it was not appropriate "because there's no fair notice of how much of that other nutrient [i.e., nitrogen] we can discharge." Oral Arg. Tr. at 40. In terms of *why* this standard did not provide fair notice, the attorney later stated that the problem with the nutrients criterion was that not even the Region could "give you a number" indicating how much nitrogen the City could lawfully discharge. *Id*. at 84.

Although the City's discussion of the nutrients criterion at oral argument did identify some specifics underlying its fair notice contention, this argument comes too late. To be preserved for review, issues and arguments must be presented to the Region in public comments. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.a(i),

above. Importantly, "[t]he effective, efficient and predictable administration of the permitting process demands that the permit issuer be given the opportunity to address potential problems with draft permits before they become final." *In re Encogen Cogen. Facility*, 8 E.A.D. 244, 250 (EAB 1999). That is particularly the case here because the City's late claim—that it does not understand a particular compliance obligation imposed by a draft permit—would be best addressed in the first instance by the permitting authority that drafted and imposed the allegedly undefined obligation.

Even if the argument had been preserved, the argument based on the nutrients criterion is inconsistent with, and even contradictory to, the City's position that the narrative standards in permit parts I.A.3 through I.A.7 provide an acceptable substitute for the prohibition against violating water quality standards. *See* Pet. at 28 ("the restrictions imposed in Permit Part I.A.3 through 7 are more than broad enough to protect the general [water quality] standard"); Part V.D.1.b, above. These permit sections use broad terminology comparable to the language in the nutrients water quality criterion. The nutrients criterion specifies that surface waters "shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses." 314 Mass. Code Regs. § 4.05(5)(c). In other words, the criterion bars impairment of the Merrimack River's designated uses of habitat for fish, other aquatic life, and wildlife and primary and secondary contact recreation. *See id*. §§ 4.05(3)(b), .06 tbl.20. The prohibitory language in permit parts I.A.3 through I.A.7 contain similar language, directing that discharges, among other things "shall be free from:" (1) "Pollutants * * * that are toxic to humans, aquatic life or wildlife;" (2) Floating, suspended and settleable solids * * * that would impair any use assigned to the receiving water;" and (3) "Oil, grease, or petrochemicals that * * * are deleterious or become toxic to aquatic life." *See* 2019 Permit pts. I.A.3–.7.

Thus, both the nutrients water quality criterion and the permit parts I.A.3 through I.A.7 require that discharges "shall be free from" substances that "impair * * * designated uses" or "impair" or are "toxic" to "aquatic life." Yet, the City offers no explanation for why the nutrients water quality criterion and the narrative compliance requirements in permit parts I.A.3 through I.A.7 should be treated differently in terms of fair notice. Certainly, the permit provisions in parts I.A.3 through I.A.7 do not contain numeric criteria, the only fair notice stumbling block that the City explicitly identified for the nutrients criterion. And as discussed in Part V.D.1.a, above, federal courts have upheld enforcement of water quality standards incorporated in permits despite the lack of any numeric criteria in those standards.

Given the paucity of the City's explanation as to the source of the lack of fair notice associated with the prohibition against violating water quality standards, and its endorsement of permit provisions with broad narrative prohibitions similar to the single, identified water quality standard of concern, the City has failed to show that the permit's prohibition against violating water quality standards infringes fair notice requirements.

Nor has the City shown that the prohibition against violating water quality standards deprives it of the protection of the permit shield in section 402(k) of the Clean Water Act. *See* CWA § 402(k), 33 U.S.C. § 1342(k). That provision states that "compliance with a permit issued pursuant to this section shall be deemed compliance * * * with sections 1311, 1312, 1316, 1317, and 1343 of this title." *Id*. As the Region pointed in the Response to Comments, litigation concerning the "permit shield" has confirmed that the shield is only operative as to a permittee that is in compliance with all terms of its permit, including compliance with any provisions requiring that the permittee meet state water quality standards. RTC at 34-35; *see Fola Coal*, 845 F.3d at 143 (holding that permit holder must comply with "*all* the terms of its permit to be shielded from liability" and because "[t]he terms of Fola's permit required it to comply with water quality standards[,] [i]f Fola did not do so, it may not invoke the permit shield"); *NRDC v. Metro. Water Reclamation Dist. of Greater Chicago*, 175 F. Supp. 3d 1041, 1053 (N.D. Ill. 2016) (holding that because the permit "incorporates the [state's water quality standards] as substantive terms of the permit, compliance with [these standards] is required in order for the permit shield to apply"); *see also In re Ketchikan Pulp Co*., 7 E.A.D. 605, 617 (EAB 1998) (holding that "section 402(k) shields a discharger from liability under the [Clean Water Act] so long as it discharges in compliance with its permit").

The City principally argues that the prohibition against violating the water quality standards deprives the City of the benefit of the permit shield because "the City will never know what it can or can't discharge at any given time." Pet. at 27; Oral Arg. at 38-39 ("[I]f you put a catch-all [in] that says don't violate water quality standards, you write the permit shield section out of the Clean Water Act * * * [because] we have no fair notice of what we can discharge in what amounts."). However, as discussed above, the City has failed to demonstrate that the prohibition against violating water quality standards does not give fair notice of the City's compliance obligations. The City's only response to the Region's reliance on judicial precedent holding that the permit shield only applies when a permittee is in compliance with all permit requirements, including requirements to comply with water quality standards, is to claim that "[t]his interpretation would read out of existence the * * * Permit Shield." Pet. at 30. We do not agree. The City's

argument apparently rests on the assumption that the prohibition against violating water quality standards creates undefined, and thus limitless, obligations, but we conclude above that the City has failed to establish the validity of this proposition.[41]

Finally, the City has also failed to demonstrate that the inclusion of the prohibition against violating water quality standards interfered with its due process procedural rights to notice and an opportunity to be heard in the permit proceeding. Notice was provided. The contested provision was included in the draft permit and the water quality standards that it incorporated in the permit by reference are published in the Massachusetts Administrative Code. If the City disagreed with the permit's requirement that it comply with any of the state water quality standards, it had the opportunity to submit comments to the Region detailing the specifics of its opposition to any or all such water quality standards, and if it was not satisfied with the Region's response to its comments, the City could have appealed that aspect of permit decision to the Board. *See Greater Chicago*, 175 F. Supp. 3d at 1053 (holding that "any permittee that believes that a given term of its permit is too vague to provide appropriate notice has recourse, either by appealing the permit's terms to the [Illinois Pollution Control Board] or by challenging the enforceability of the permit term in an enforcement action"). Again, the City's due process arguments appear to fall back on its lack of fair notice assertions—"due process is the City's * * * right to know what limits EPA believes to be warranted and with which it must comply"—and thus fail for the reasons discussed above in the context of its fair notice argument. *See* Pet. at 28.

For all the reasons provided above, we conclude that the City failed to meet its burden to show that the Region clearly erred in including the prohibition against violating water quality standards in the permit.

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[41] The City expands on its argument that the Region's interpretation of the permit shield has read that provision out of the statute by contending that the permit shield provision is rendered meaningless if the Region can assert that a water quality standard is being violated, "despite the numeric limitations of a permit and the extensive [reasonable potential] process that the issuing agency went through precisely for the purpose of identifying those pollutant limitations necessary to protect water quality." Reply Br. at 18. However, the Board will not consider new arguments raised in a reply brief. *See* note 22, above.

2. *Objections to the Specific Prohibition Against Violating Water Quality Standards for CSO Outfalls*

In addition to the permit provision that generally prohibits the City from violating water quality standards, a separate provision specifically directs that discharges from Lowell's CSO outfalls "shall not cause or contribute to violations of federal or state Water Quality Standards." 2019 Permit pt. I.F.2.b; s*ee* Pet. at 30. As the Region explained in the Response to Comments, the CSO Policy requires that permits must mandate compliance with state water quality standards no later than the date allowed under state law. RTC at 40. The Region also referenced two other EPA policy documents—the NPDES Permit Writers' Manual and Combined Sewer Overflows: Guidance for Permit Writers—that reinforced this message. *Id*. (citing Permit Writers' Manual at 9-16 to -17; CSO Guidance for Permit Writers at 3-36 to 3-37, 4-27). In particular, the latter document states that "[a]s described in the CSO Control Policy, Phase I permits should at least require that the permittee immediately comply with applicable [water quality standards] expressed in the form of a narrative limitation." CSO Guidance for Permit Writers § 3.6.2, at 3-36; *accord id*. § 4.6.2, at 4-27 (explaining that for Phase II permits "[i]n addition to performance standards designed to meet [water quality standards], the permit writer should include narrative permit language providing for the attainment of [applicable water quality standards]").

In its petition, the City contends that the Region erred by requiring immediate compliance with water quality standards because the City "is entitled to a compliance schedule (determined through the approved CSO [long-term control plan]) to bring its CSO discharges into compliance with water quality standards." Pet. at 30. The City does not cite to any legal authority supporting this claim, nor does the City explain how such a compliance schedule could have been incorporated into the permit in the absence of the City having developed and submitted a long-term control plan prior to the proposal and finalization of the permit renewal. In its reply brief, the City expands slightly on this argument, contending that "the CSO Policy requires compliance with applicable water quality standards at the end of the implementation of the [long-term control plan]." Reply Br. at 20. Again, however, the City did not cite to any particular language in the CSO Policy that would waive the City's legal obligation to comply with state water quality standards until implementation of its long-term control plan is complete.

Only at oral argument did the City offer a specific legal argument responding to the Region's contentions in the Response to Comments as to the need for discharges from the City's combined sewer outfalls to meet Massachusetts water quality standards. Citing to the statement in the CSO Policy that compliance

with water quality standards is required "no later than the date allowed under the state's water quality standards," the City contended that the Region could not require compliance with Massachusetts' water quality standards because the Region did not know when they went into effect for combined sewer overflows. Oral Arg. Tr. at 36, 82-83. When asked whether the Region could not rely on Massachusetts' certification under section 402(a) of the Clean Water Act that the draft permit met state standards, the City claimed that "[t]he state didn't know what it was certifying on that point." *Id*. at 83.

The City has failed to meet its regulatory burden to explain, in its petition, how the Region erred in responding to its comment on the requirement that combined sewer overflows not violate state water quality argument. *See* 40 C.F.R. § 124.19(a)(4)(ii). Further, its legal argument that the Region has not shown that the state's water quality standards are in effect for combined sewer overflows comes too late. Instead of first raising this contention at oral argument, the City was required to raise the argument in its public comments. By not raising the argument as a public comment, the City did not preserve the argument for review. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.a(i), above. Moreover, the regulations limit the inclusion of new arguments in a reply brief, and that rule applies to new arguments raised in oral argument. *See* 40 C.F.R, § 124.19(c)(2); note 22, above.

Even if the issue had been preserved, the City bears the burden of demonstrating that the Region clearly erred in including the prohibition against violating water quality standards with respect to its combined sewer outfall overflows, and the City has cited to nothing showing that the state's water quality standards are not in effect as to those discharges.[42] Additionally, although the CSO

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[42] At oral argument, the City suggested that the CSO Policy's statement that compliance with water quality standards must be no later than the date allowed under those standards must be read in conjunction with the Massachusetts water quality regulation granting the Massachusetts DEP discretionary authority to approve compliance schedules. Oral Arg at 33, 35. That regulation directs that "[a] schedule of compliance shall require compliance at the earliest practicable time, as determined by [Massachusetts DEP]." 314 Mass. Code Regs. § 4.03(1)(b). The City also appears to contend that it was granted a compliance schedule, Oral Arg. Tr. at 33 ("[Lowell] got a compliance schedule"), but that the City is not aware whether Massachusetts DEP has established the "earliest practical time" for the City's compliance. *See id*. at 33-35. These issues should have been sorted out in the first instance in the permit proceedings before the Region, and the City's failure to raise them there means they have not been preserved for Board review. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.a(i), above. Moreover, new arguments may

Policy specifies an outside date for compliance with water quality standards—"no later than the date allowed under the State's [water quality standards]"—it does not bar requiring compliance at an earlier time. *See* 59 Fed. Reg. at 18,696. Finally, we take seriously Massachusetts' certification of the draft permit as complying with state law and note that there is nothing on the face of Massachusetts' water quality regulations indicating they are not currently effective.

For all of these reasons, the City has failed to demonstrate that the Region clearly erred when it included the provision prohibiting discharges from the City's CSO outfalls from violating water quality standards. As such, the Board denies the petition for review on this issue.

E. *Monitoring and Testing*

The City challenges the frequency of monitoring requirements for Whole Effluent Toxicity and metals as well as several specific test requirements that apply more generally.

1. *Whole Effluent Toxicity Monitoring*

Whole effluent toxicity ("WET") "refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's wastewater (effluent)." Office of Water, U.S. EPA, *Whole Effluent Toxicity Methods*, https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods (last visited June 22, 2020); *see* 40 C.F.R. § 122.2 (definition of term). Effluent and monitoring requirements for WET in NPDES permits are designed to protect aquatic life from these toxic effects. Permit Writers' Manual § 6.1.3.2, at 6-11 to -12. The 2019 permit generally maintained quarterly WET monitoring requirements from the 2005 permit.

The City challenges the continuation of this monitoring requirement, arguing that "[a]fter [fourteen] years of quarterly WET testing, our effluent is well[-]characterized as being non-toxic" and the Region's analysis shows "our effluent is nowhere close to having reasonable potential for the common municipal toxicants (e.g., copper, lead, ammonia)." Lowell Comments at 6; Pet. at 22. Thus, the City asserts that "quarterly WET testing is simply a waste of time and public resources." Lowell Comments at 6; Pet. at 23.

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not be raised in a reply brief, much less at oral argument. *See* Part V.A.1.a(i) and note 22, above.

In responding to the City's public comments on WET testing, the Region first noted that the permit's WET monitoring requirements followed "the [Massachusetts DEP's] current toxic[s] policy[, which] requires toxicity testing for all dischargers such as the [Lowell treatment facility]." RTC at 24. The Region next explained that recent WET monitoring showed results that "demonstrate the potential for toxicity to occur," and that data on lead levels also "reveal that the downstream concentration is quite close to the chronic criterion." *Id*. at 25. Taking these results into account, the Region concluded that "quarterly samples over the next permit term would allow for a more robust [reasonable potential] analysis." *Id*. Finally, the Region did note that it had reduced the number of test species required for the WET monitoring in the 2019 permit to a single species. *Id*. at 24-25.

In its petition, the City contests the weight that should be put on these prior WET and lead monitoring results. It argues that only two out of twenty chronic WET tests showed results close to toxic levels and from that the City concludes that "[t]hese WET data raise no concern at all about effluent toxicity." Pet. at 23. Further, the City contends that the lead test results the Region relies upon show "no concern about lead toxicity as a possible component of WET-measured toxicity" because "the Region conclude[d] there is no reasonable potential for lead exceeding the adopted water quality criterion." *Id*.

Based on these arguments, the City has not shown that the Region clearly erred in maintaining the quarterly WET monitoring requirement. Under the Clean Water Act, the Region has broad authority to impose monitoring requirements,[43] and the Board has previously held that this broad authority pertains "regardless of

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[43] Section 308(a)(1)(A) of the Clean Water Act provides that:

> Whenever required to carry out the objective of this chapter, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, * * *
>
> (A) the Administrator shall require the owner or operator of any point source to * * * (iii) install, use, and maintain such monitoring equipment or methods * * *, (iv) sample such effluents * * *, and (v) provide such other information as [the Administrator] may reasonably require[.]

CWA § 308(a)(1)(A), 33 U.S.C. § 1318(a)(1)(A).

a pollutant's potential to cause or contribute to a water quality violation, and regardless of whether pollutant discharges are restricted by an effluent limit." *In re Town of Concord*, 16 E.A.D. 514, 541-42 (EAB 2014) (citing cases). Thus, the Region did not have to show that prior WET monitoring had shown a reasonable potential that the Lowell treatment facility's discharge would exceed toxicity standards as the City suggests in its petition. Further, the Board generally defers to the Region's technical judgment on such science-based matters as the weight that should be attached to prior test results or amount of monitoring needed, and the City has provided no basis for us not giving that deference here. *See In re Evoqua Water Techs. L.L.C.*, 17 E.A.D. 795, 828-29 (EAB 2019) (deferring to the Region's judgment on amount of monitoring needed); *In re FutureGen Indus. All., Inc.*, 16 E.A.D. 717, 739, 743 (EAB 2015) (deferring to the Region's determination on "the placement of testing and monitoring wells" because that determination "necessarily involves highly technical judgment and expertise" and because the Board will not "second-guess the Region's technical determinations based on Petitioners' bald assertion"), *pet. for review dismissed as moot sub nom. DJL Farm L.L.C. v. EPA*, 813 F.3d 1048 (7th Cir. 2016). Finally, the City offers no response at all to the Region's explanation that the monitoring requirements are based on Massachusetts policy and that it has decreased the extensiveness of the testing requirement in response to the City's concerns.[44]

Accordingly, the City's challenge to the WET monitoring requirement is denied.

2. *Metals Monitoring*

The City objects to the permit requirement to maintain quarterly monitoring of metals such as aluminum, cadmium, copper, nickel, lead, and zinc. Pet. at 24. In its public comments, the City argued that "we are nowhere close to having reasonable potential for any of the metals we test for." Lowell Comments at 6. As an alternative to quarterly monitoring, the City proposed that sampling for metals be limited to "the three priority pollutant scans that we conduct each permit term."

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[44] In its reply brief, the City raises two new arguments. First, the City claims that it is impracticable to take monitoring samples in the winter months. Reply Br. at 4. Second, the City argues that quarterly monitoring for WET is unnecessary because where "there are fewer data points, a multiplier procedure is used that scales up the predicted effluent concentration." *Id.* These arguments were not raised in public comments and thus have not been preserved for review. *See* 40 C.F.R. § 124.19(a)(4)(ii); Part V.A.1.a(i), above. Moreover, new arguments may not be included in reply briefs. *See* 40 C.F.R. § 124.19(c)(2); note 22, above.

Id. The City expanded on this latter point in its petition, arguing that the City's reliance on a single data point showing lead levels of concern "go far beyond the standard of EPA's own regulation at 40 C.F.R. § 122.21(j)(4) [for permit renewals]," and thus "does not justify the amount of sampling and analyses required here." Pet. at 24.

In the Response to Comments, the Region declined to reduce lead monitoring, pointing again to the concerning lead value found downstream of the Lowell treatment facility and the fact that "chemical-specific monitoring is required as part of the WET protocol." RTC at 25.

The City's arguments here, to the extent they have been preserved for review,[45] are not persuasive for much the same reasons as with its challenge to the WET monitoring requirements. Contending that the data do not show a reasonable potential for metals to exceed state water quality standards is not sufficient to show that the Region erred in requiring that the City continue to monitor metals. Further, the City has offered no response to the Region's reliance on the Massachusetts DEP policy on WET monitoring, and the fact that the WET protocol includes metals testing. Finally, the City's proposal to test at no higher level than required by EPA regulations for permit renewal applications does not offset the Region's data-based reasons and the Massachusetts DEP policy-based reasons for continuing monitoring requirements.

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[45] The Region argues that the City has waived its argument based on the permit renewal regulation because that argument was not included in its comments. Resp. Br. at 40. We agree. *See* 124.19(a)(4)(ii); Part V.A.1.a(i), above. The City did not cite the regulation. Rather, in a two-sentence comment, it merely contended that based on the results of prior sampling, "the three priority pollutant scans that we conduct each permit term" would be sufficient. *See* Lowell Comments at 6. Arguments are not preserved for review unless presented "during the public comment period with sufficient clarity to enable a meaningful response" and, as noted earlier, the permitting issuer need not be "prescient" as to "vague or imprecise comments." *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000); *In re Sutter Power Plant*, 8 E.A.D. 680, 694 (EAB 1999). Even if the argument had been preserved, the City's brief mention of the metals testing it is currently conducting does not explain how the Region erred in relying on facility-specific reasons and Massachusetts monitoring policy for deciding to continue the quarterly monitoring requirements for metals.

3. *Requirements to Sample on Specific Days and Times*

The 2019 permit specifies that as to monitoring requirements "[a] routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month." 2019 Permit pt. I.A.1 n.1. Deviations from this schedule are allowed if the reasons for the deviation are documented in the applicable monitoring report. *Id*. The permit also requires that quarterly WET monitoring be done during the same weeks in January, April, July, and October. *Id*. pt. I.A.1 n.13.

In its comments, the City objected to these requirements, asserting that they amounted to "micromanaging" and that such restrictions were not placed on other permittees. Lowell Comments at 6. The City argued that the EPA regulations require no more than "representative sampling" and "there is no legal or technical basis" for these restrictions. *Id*. at 6-7. The Region responded that the sampling requirements "facilitate[] the ability to track long-term trends in effluent quality and to characterize the discharge without any bias related to the variability within a given day or week." RTC at 26. Further, the Region explained that these types of requirements have been generally included in "all recent Massachusetts NPDES permits" following instances in which "certain permittees' sampling practices [] tested the boundaries of the term 'representative.'" *Id*.

In its petition, the City challenges, as without basis, the Region's claim that the sampling requirements prevent bias. The City argues that "it is inconsistent and incorrect to conclude that required long term sampling on the same times and days would prevent bias as to variability" because such sampling "would by definition be biased (either for better or for worse) as to and favoring the required times and days." Pet. at 31. In its reply brief, the City proposes a sampling program using a "random design" as a preferred alternative to the permit requirements. Reply Br. at 21.

The City's arguments do not show clear error. The Region explained that in reaction to some permittees' attempt to push the limits of the regulatory requirement for representative sampling, it imposed standardized requirements on sampling times in a manner it concluded would eliminate bias. RTC at 26. The City contends that the restrictions will have the opposite effect but offers nothing to substantiate this technical claim. Its suggestion that sampling be conducted on a random basis should have been submitted at the public comment stage, not in a reply brief. 40 C.F.R. § 124.19(c)(2). The City bears the burden in this proceeding of demonstrating that the Region clearly erred. That burden—especially as it

relates to a technical matter—cannot be met by conclusory assertions in a legal brief. Accordingly, the City's challenge to these permit terms is denied.

VI. *CONCLUSION*

For the reasons cited above, the petition is denied.

So ordered.

CERTIFICATE OF SERVICE

I certify that copies of the *Order Denying Review* in the matter of City of Lowell, NPDES Appeal No. 19-03, were sent to the following persons by email:

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Dated: June 29, 2020

Eurika Durr
Clerk of the Board